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I

THE AMERICAN TEACHER IN POLITICS[1]

THE NEW STATUS OF THE TEACHER

The era of the teacher's separation from politics and of his isolation from popular propaganda and public work on the problems of society has ended and a new era of increased responsibility for existing conditions and of increased power to remedy evils and redress grievances existing in society has begun. Heretofore, all teachers have depended for their influence and their authority upon an assumed professional status and a hoped personal acceptability in order to obtain recognition for their capabilities as public servants and for their efficiency as educators of the masses. Today this situation is changed so that as public workers they will have prominence at the polls, power as a business force in society and capability in the ways and means of state craft and of political engineering. Educational propaganda of the sanest and shrewdest kinds are from this time forth essential parts of all educational administration and service for the masses, while the spirit of conviction and of dictation will become the animating force of the workers in preference to that of irresponsibility and of persuasion. In the past, the only avenue of effort that was open to men educators has been that of argument, suggestion and solicitation, as their numbers were few and their subordinates were possest only of a moral and social interest, but with the advent of the woman teacher as an elector,

[1] Paper read before the Iowa State Teachers' Association, Des Moines, Iowa, November 7, 1919.

the increase of organized numbers is so great and the opportunities of exercising power are so frequent and the uniformity of their intelligence is so pronounced that the united force thus provided can have unusual power in the deciding of the issues of society at the polls, and in educating the masses as to the actual truth of the problems that are submitted for public decision. By these recent developments, the teachers of any community, of any county, of any state and even of the nation have the numbers, have the intelligence, have the means of procedure, have the harmony of interest, have the freedom from prejudice and have the capability of knowing and investigating, that candidates for office, managers of political parties in campaigns and workers aiming to control and to direct public opinion, are obliged to recognize them as a new special class of independent and reliable voters. This recognition classifies them as thoughtful and active, and their opinions and conclusions can no longer be overlooked because of their unimportance or their indifference, while their votes will be assuredly cast at elections of all kinds and their decisions can be depended upon to represent honest intention, patriotic purpose and consistent policy.

THE IGNORANCE OF THE INTELLIGENT

Even if these views be accepted as to the certainty and the probity of the teacher-voter, yet there remains to be adjudicated and comprehended and realized, that there is a possibility of such a condition among the so-called educated class as that of the ignorance of the intelligent. This situation is not a supposition but a fact, and teachers are proud possessors of this state of mind that deprives many of them of the real influence their education should give or their distinguished morality and position in society should confer. Business knowledge and personal capability as political thinkers are fundamental to proper efficiency in matters of government or in comprehending the problems that are continually dominant in many campaigns for votes in all classes of elections. National, state and

local governments depend entirely for their success upon a financial sanity and a moral integrity in all the transactions that take place. It matters not how honest the intentions, how sincere the aims or how well determined the purposes, if financial undertakings of the government are not well and wisely managed, then the best endeavors are doomed to failure. Intelligence of a high order on all questions of the currency, on all problems of production, on all economic questions of success and prosperity, on all fundamental conditions of thrift and saving, on all propositions that enable the individual to have financial judgment, are of imperative importance to the competent and effective voter. Now teachers are commonly possessors of a supreme, well-satisfied confidence regarding their financial ability that is generally misleading. They believe that they can not be ignorant of the principles and practises of business, and that having good ability as scholars and instructors in the knowledge and wisdom acquired in and from the schools and colleges, they must also have business capability and judgment. It seems to them that they comprehend business propositions with a clarity that is unusual, a mental situation that induces them to deem themselves safe from fraud, imposition and trickery, and thus causes them to make investments, to accept blue-sky deals, trusting implicitly to the truthfulness of those who play upon their vanity with compliments in order to profit by their absolute ignorance in the school of experience. It can easily be established that intelligence in certain lines of thought and action is no guarantee against ignorance and incompetency in other lines of thought and action, but that all varieties of experience and of training for the judgment are required to insure to the well educated a fair chance to measure up in knowledge and standards of quality with many a man of special experience tho possest of less mentality and scholastic attainments. Therefore, to insure that teachers will be capable voters, requires that they qualify in all the characteristics and qualities of business intelligence and political enterprises in order not to be subject

to foolish vagaries and reckless policies that are constantly developing in civic and national life.

ANOTHER EXAMPLE

There is equally as large a difference between political theory and political practise. Success as a voter on public policies depends upon how well plans and efforts can be carried out with efficiency and success, not upon how clear and promising they seem to be in theory. Political philosophy is often a great attempt to scheme out world affairs on so-called theories rather than on absolute facts. Philosophy and speculation are easy ways to come to convincing conclusions, while experiences and sanity are hard ways to come to conclusions. Nothing is nothing and there it will remain, however many times it is added or multiplied. Yet despite this well-known mathematical fact there are many would-be leaders of thought and action that vigorously endeavor to lead the people to believe that something can come from nothing; that such facts as prosperity, efficiency and capabilities are accidents and manipulations rather than products of hard work, strict economy and wise investments. These types of deceit are common in the treatment of the wage question, in the ideas that factories and businesses belong to those who are employees; that incomes are dependent upon opportunities and favors rather than upon industry and sacrifice; that administrators and managers are unnecessary and undesirable, because they are detrimental to the welfare of all; and that capital is a fiction invented to mislead the common people in order that success may be obtained by the few at the expense of many, who are refused their rights and their fair share of the returns of prosperity. In this way of thinking and reasoning it is easy to conclude that schools are directly conducted for the benefit of the teachers and indirectly conducted for the benefit of the pupils, that school directors and taxing boards and superintendents are not essential to the success of education or of the schools, that it would be better if all the so-called overlords were discharged and that the school teachers were allowed to

conduct all these public affairs according to their own judgment and on their own initiative.

EDUCATIONAL STATESMANSHIP

What America needs in this year 1919–20 is statesmanship of the highest order, a kind of individual preparedness that makes voting at the polls decisive and determinative in results rather than a time for the displaying of party prejudice and political chicanery. What is the truth, is an ever-present question to be properly answered. What is the best plan to adopt to secure the progress of the truth and to insure the prosperity of all men by the right enjoyment of the privileges of citizenship, is a problem that is prominent at every popular election. It is said that the teachers of Chicago brought about the re-election of Mayor Thompson because they regarded him as their class friend, an officer who would use his influence to increase their salaries and reduce the alleged tyranny of school boards and school superintendents. A similar conception of what Mayor Thompson would do for labor, for laxity of law enforcement and for the underworld, when in office gave him the unanimous support of the denizens of the underworld, of the members of all labor organizations, and of the representatives of all questionable business enterprises that existed, as all sought their personal prosperity rather than the public welfare and progress. What all education needs everywhere is an honest, clean statesmanship, and without it as the spirit of direction and control there can be no notable prosperity or universal success. What the business interests need, what the social interests need, what the moral interests need, what the welfare interests need, is genuine statesmanship and the object of the new aggregation of voters should be that of discovering these fundamental conditions, of applying these means to ends, and of refusing to follow any leadership that does not mean in all sincerity the welfare, the prosperity, the progress and the happiness of the whole people. Man suffrage has failed to attain a properly high standard in the political organizations, policies and plans that have appeared, because of ignorance,

incompetence and indifference existing among the great body of male electors. Woman suffrage will fail to help improve matters in the very beginning if the conditions of inexperience, of the lack of reliable information and of the suspicion of motives are allowed to hinder and to confuse the mind and the conscience of the woman elector. Suffrage extension is not a panacea for the ills of society, and its benefits should not be judged and estimated from such a standpoint because such extension is the recognition of the rights of the individual rather than the recognition of the competency of the individual to be wise in deciding political issues and moral aims by casting votes into a ballot box. The woman voter will come to her own in responsibility and efficiency only when she allows the claims of statesmanship to dominate her attitude and the knowledge of statesmanship to guide her decision on public questions.

THE INCREASE OF TEACHERS' POWER

The adoption of woman suffrage will greatly increase the mobilized power of the teachers of a community, but the result should be more in the direction of an honorable influence than it should be in the direction of a supremacy of numbers, because women teachers are so situated that they have special opportunities to touch the patrons of their schools in many effective ways. Thru mothers' meetings, thru parent-teacher associations, thru organized effort and propaganda, thru the fact that teachers are women workers independent and self-reliant, thru the public service that is constantly being accomplished, thru the unequaled opportunity for acquaintance and popularity, thru the possible efficiency of cultivating the homes and the people for the benefit of the schools and for the benefit of good citizenship, the teacher-voter is able to develop a following and to establish a constituency that can be depended upon for response to good will and for confidence in disinterested leadership, if the teachers are so well informed in the problems at issue and so rightminded in their instruction that they can give active direction and unprejudiced assistance to those

who want to cast their votes in favor of the better outcome of society and the proper uplift of civilization. Since the teacher is on the job all the time, since the teacher can easily keep informed all the time, since the teacher can safely supply propaganda all the time, the very privilege of being a public servant gives large and telling opportunity to do the highest public service without selfish aim or individual object of promotion. These well-known possibilities give opportunities for helpfulness and for organized influence that depend largely upon the teachers' maintaining their independence of party control and their freedom from party spirit. The salvation of democracy as a system of government depends upon the reaction of the independent voter whenever the candidate is unworthy or the policy advocated is insincere and unwise.

THE TEACHER STUDY CLUB

Thus far the teachers' organizations have been academic, professional and social, the themes they study and the efforts they make being on the plan of self improvement, individual training and community educational welfare and cooperation. The object has been that of betterment of spirit by the diffusion of good feeling and appreciative sympathy. It has been accepted generally that other ideals and undertakings are not a part of the teachers' service to society. But now since responsibility has been enlarged and the necessity to be active as voters has come to be a fact, the teachers' study clubs must be equivalently civic and political. These organizations must ascertain the career and the accomplishments, the tendencies and the delinquencies, the supreme aims and the ulterior objects of every political party seeking authority to conduct the government, as well as seek to know the character and the competency of everyone who poses for authorized leadership in the community, the state, or the nation. By such investigation and by such keeping in touch with current events, by such knowledge and by such experiences, the woman teacher as well as the man teacher can become so well informed and judicially minded that she would cast her vote intelligently

because she is directed by reason and by discretion. For these reasons the teachers have the opportunity and the time and the energy to keep abreast of the activities of the age, to think out fully and completely the practical problems of the present and to come to definite and reliable conclusions governing the conduct and the administration of public affairs. In doing this training for citizenship the whole undertaking must be considered a real matter of necessary business, the application to be given must be regarded as absolutely impossible to be avoided, and the results to be obtained must be recognized as patriotic accomplishments to be secured for the welfare and the success of the common country.

ECONOMIC SUPREMACY

The chief end to be gained depends upon the teachers' not combining into an organization for the sole aim of economic supremacy or professional dominance. Their chief service ought to be helpfulness and enlightenment. Such an object as economic supremacy destroys their potency as patriots and eliminates their appropriate altruism as citizens, while the spirit assumed by such attitude deprives them of any effective civic leadership. Where class hatred and class combinations are called into action, as in labor organizations, as a means to secure self-advancement and to compel class recognition, there can never be the kind of consciousness that exalts and ennobles the personal life and the community welfare, as the spirit engendered is destructive. The chief danger of today is that women will vote as women rather than as citizens, that they will restrict themselves to class distinction rather than seek to gain citizenship distinction, and that they will believe that women's methods of thinking have special merit because of their origin rather than their special competency because of breadth of vision and fundamental spirit of efficiency. While the great majority of teachers are women they should rise above such mediocrity by so equipping themselves for statesmanship that their voting will have fundamental and lasting value in a republican

form of government. By so doing, the majority of the votes cast at the polls will mean the best good to the greatest number and will produce a civilization that is founded on sanity and conducted with probity.

THE OBLIGATION MET

There is great need for a new ideal of democracy, an ideal that demands universal participation in every political movement by all the voters. Universal suffrage should carry with it universal activity and universal responsibility. Anything short of universal attention to the caucus, to the primary, to the public meeting and to the regular or special election should be sufficient to deprive any citizen of the right of suffrage. The fact that a voter is dissatisfied or displeased or out of agreement should never permit the individual to refuse to serve the country at the polls. The main evil in American politics is that of having the authority to help decide great questions and then refuse or shirk the responsibility to exercise that authority. To be proud of our common country and of our rights of citizenship is one thing; to be a dependable, conscientious factor in protecting this authority and in honoring this citizenship is quite another thing. To be a peripatetic worker in the great causes of civilization and of righteousness and yet claim to be a real man or a real woman of lofty aims and great purposes is a discredit to all assumed manliness and womanliness in civic responsibility, while the acting of a lie by pretending to be an advocate and defender of liberty and freedom is a deplorable attitude that is in reality dishonorable and indefensible. To relieve this common situation existing in America in our body politic, it is the bounden duty of all American teachers to begin at once a career as a politician in order that they may be positive factors in all progress and enlightenment.

PROPAGANDA

There is no fact more definite and well established than that the teacher of the children of the American people needs to be an active and a continuous propagandist for

all the glory, excellence and progress of the race and of the country. By a judicious, sincere and patriotic propaganda, education, business, morals, religion and politics can each be purified and exalted as the determining factors in our civilization. They all need and require the right kind of organized propaganda to be able to fulfil completely their mission to society. On this account the universities and the colleges should become centers of great intelligence, culture, moral ideals and advancing social standards in which every aim should be the enlightenment and the improvement of mankind. For this culmination of effort the public schools should be fountains of nobility of life in which there rises continually the development of noble virtue, lofty character and abiding grandeur of life, appealing to every child to do his best, causing such a development of usefulness, of idealism, of standards of effort and of glory of realization that the grandest and the greatest outcome of personality and of productivity may be inherited and cultivated.

CLASS INTOXICATION

In carrying out these suggestions as to the province of the American teacher, there must be the most decided humility of spirit and the least exaltation over success. Class intoxication over the attainment of power or over the securing of place is a serious handicap in every enterprise where continuation of efficiency depends upon the support of the masses. A following in a democracy soon dissipates whenever the person of power drops the attitude of service or assumes the attitude of dictatorship. The chief political leaders are not office holders, nor seekers for promotion and prominence, but are those who thru their knowledge of the masses and the spirit of mankind are able to decide the policies and plans that shall be inaugurated and find the candidates for office who will be willing to give the personal services to reach these ends. No class of citizens can more easily accept such unofficial service or can be more successful in its accomplishment than can teachers in the common school, as their sacrifices as public workers give them a

faithful following that enables them to wield power and attain true leadership. Even the committees and commissions who are appointed by groups of workers to secure legislation are too much inclined to boast of their prowess or their success or their influence rather than to give the entire credit for the results to the members of the General Assemblies who supported and adopted the laws. Workers of any kind who seek the public welfare, who sincerely desire the happiness and success of all the people should wait for their compliments and their commendation until these come from those who are benefited by the new conditions that have been secured thru using the means and ways of democracy. Any other assumption of authority will be disastrous to the cause and destructive to the power of the leader in such great undertakings.

THE TEACHERS AS INSIDERS

Yesterday the teachers were outsiders, standing at the door of public opinion and asking to be heard patiently on the great matters that experience had taught them to be of the greatest importance. As outsiders they were compelled to be satisfied if their plea was considered unacceptable or was even repudiated as impractical and unreasonable. All this is changed, as from this time forward the teachers are insiders, they are formulators of public opinion, they are creators of public expediency, they are organizers of administrative efficiency, they are expounders of social philosophy, they are promoters of economic betterments and they are assumers of political responsibility. As insiders they are partakers of personal initiative, they are solvers of public problems and they are coworkers in national and state development. This being their mission, their necessary acquirements are decided, their efficiency in initiative is evident and their opportunity for service is established. What the future may bring forth remains to be solved. What the outcome may become depends upon intelligence and wisdom.

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II

ON EDUCATION AND THE NEW DEMOCRACY

A pompous and ribbon bedecked Louis fourteenth of France rises in the council chamber before his minions of state and exclaims, "*l'etat, c'est moi!*" How much more relevant indeed for the tiniest of school kiddies of the present-day régime to pertinently assert "the state, it is I." In the first instance, behold the semblance of cynicism and tyranny; in the latter the embodiment of the ideals of the new democracy.

Gradually and more so, do we seem to be drifting to the Utopian goal where the school is assuming more duties which bring it in closer relation with the child and the home. An analysis of these present relations tempts one to ask whether or not the home and community in general are "passing the buck" to the state, in causing the latter to take on so many functions for the welfare of the child. However, since the child is the state, then the latter is simply preparing its own successor.

Anyone propounding these doctrines of child and state as near as three decades ago would have been regarded as a dreamer, an idealist and perhaps a demagogue. Today, social education is a salient feature of our civilization. Thru it results the coordination of humanity; the ability to fit into the general scheme of things and partake equally in the activities of an organized body, the state. Facts which, of course, bring with themselves the warning that an educator for the state today must not be of the intolerant or bigoted sort or attempt to inject any such traits into our modern school systems.

In the past, the school and the state were separated by a vast abyss; for education then centered on the abstract. The result was a great amount of economic waste engendered by the necessity of the individual obtaining sufficient

education to bridge the chasm. Today we are approaching a sort of circular and reciprocal state of affairs with the child on the circumference. The school (state) prepares the child. The child matured is the state, and upholds the school. This is becoming possible because the school is gradually realizing the necessity for concreteness and the doing away with ideals that are merely echoing traditions of the past and reflecting a preparation for conditions which in our modern communities do not exist at all.

One of the earliest protests against this system to which our universities particularly clung with the tenacity which amounted to an institutional obsession, came in the seventeenth century from the physician and philosopher, John Locke. His great essay is in fact a protest against what he considered the tyrannic authority of the school and the transmission, generation after generation, of the traditions of the past. His classmate, the antiquarian, Anthony Wood, ascribes this phase of Locke's nature to a "turbulent spirit, clamorous and discontented," but it is very evident today that there was more logic than discontent in this objection of Locke's. It was this same Locke incidentally who may be said to have opened the great breach in modern philosophy which resulted in a separation of the two great branches of the Teutonic race, the German and English, and which terminated on the bloody fields of France. This, Locke may be said to have accomplished, by separating the Ego of Descartes from its metaphysical cage of antiquity.

Behold our academies, colleges and universities of today. The past observed them carrying upstream, oft against a probable upheaval, the purely cultural taint which aristocracy had bestowed on them. Today, how different. The efforts of the past simply resolved themselves to an accumulation of what might be termed Educational Chauvinism; hero-worship of antique literature and historical achievement.

The elementary schools of the past simply administered the trite and much abused "three Rs." If the child possest a little natural aptitude, he was considered then

ready for the cultural Chauvinsim of the "higher education." But, unfortunately, not all were surrounded with the necessary conditions conducive to a college education. The result was very much in evidence. The schools, thru the caste system, permitted those very ones of its members to fall thru, who were the least prepared to become an integral part of the state. The links which should have united them to the state, had been denied them.

The proverbial lane seems to have been unusually long in this regard before the logical turning came. These conditions received their first shock when the Bastille fell and with it apparently seems to have come the realization that the element hitherto considered so unessential in the general scheme of pedagogy, that much scorned "third estate," could utilize education. But, unfortunately, there was no paragon from which to model a new system which would cater particularly to the proletariat except that which had been bestowed upon an aristocracy. Therefore it is that even at the present time we still find distinct evidence of the feudal and traditional systems in our curriculums, particularly in our universities.

One must condone the slowness of even the present-day changes in educational endeavors when we realize that today we are living in a materialistic world dependent on science for its progress; whereas in the past, advancement proceeded by the application of skill from the minds of the classes. Also it is a poor sport indeed who bewails the abrupt and sudden changes that come, oft overnight. For while the words efficiency and enlightenment are quite evident in educational literature, yet it must be quite evident to the observer that the educational world is just emerging from darkness and only from a distance comes a glimpse of the new and potent education of tomorrow.

This education of tomorrow will of necessity woo the new democracy. The greater vision leads to the idea of the school making all children a part of the state and permitting natural factors to ordain who shall become the leaders of the state and not thru the power of class privilege. One

of the most gratifying evidences that the school and state are linking up is the splendid cooperation one observes in communities where the schools are beginning to teem with the new education. In the past one observes universal estrangement or complete indifference at best twixt school and home. Today we find the schools being utilized for community needs such as parent-teacher associations, mothers' clubs, boy scout organizations and the like. Even the state and federal authorities are recognizing the efficiency and potency of the school as a center of dissemination for information on various topics.

One of the greatest deficiencies in the past relation between the school and the state has been the abrupt, so to speak, washing of its hands by the state, of the child who had attained legal age. The occurrence might easily be deemed a tragedy, and is still with us today. No doubt it will continue to obtain, until there has been established a connection with the elementary school graduate and the state, that shall not be severed until the individual is placed in his life's vocation.

On analysis, the conditions which are extant at the present time resolve themselves into a continual production of the proverbial square pegs for round holes. Our elementary school humanity, as it emerges from what is in most instances an only too deficient education, to enter the intense struggle for existence, brings boys and girls forward with an impetus that is impelled; not by a system that has taken their immediate vocational future into consideration but has shaped their course rather after the fashion of that for a golf ball, which is usually propelled forward by, not necessarily, an insouciant attitude in the intention but with very much the idea that if it do not fall into one hole adjacent, it will undoubtedly find its way into one of the openings along the course.

Obviously then, such a system is lacking in the very accomplishment for which it was intended. Indeed our present-day status might be likened to that of a manufacturer who turned out pistons of one size to fit cylinders

of approximate size, but instead of grinding them down to where each would slide perfectly and easily in its individual cylinder, is content and feels that he has done his full duty in making only an approximate adaptation.

The result is, of course, manifest in both instances, and yet one marvels to hear our dry-as-dust economist dilating on the presence of economic waste, discouragement, discontent and unhappiness, when one knows that it is due to the turning out semi-annually from our public schools thousands of boys and girls into a tense arena of unrest and a sea of turmoil with craft poorly equipt for the struggle and in only too many instances to fall by the wayside at the first adverse wind. Efficiency is the by-word of present-day demands but this is manifestly nipt in the bud by a system that ignores vocational training. The new democracy is seemingly calling a halt to this system, judging by the architectonic coruscations that one observes here and there on the part of our larger public school systems. The state indeed had best hasten and look to its laurels in this regard for there are springing up here and there institutions which formerly were content to dabble in sociologic endeavors, but having recognized the great need of the times are changing their signs and offering vocational training. However, the duty of the state in this regard must needs be unique and specialized, for to itself will fall the task of teaching the child how to find itself.

One of the strange phases of the modern vocational movement is the ever-present inclination on the part of humanity to swing from one end of the pendulum's course to the other extreme, by losing sight of the fact that the real and ultimate object of a logical vocational guidance movement is to keep the state in touch with its protégé, erstwhile the child, later the adult, and not to emphasize the relationship by merely finding a vocation or job at an early date and sacrificing an adequate amount of academic work that will always be essential. Odd indeed is this ubiquitous penchant of humanity to rush for extremes.

One sees and hears on every hand regrets and depreca-

tions on the part of state and federal authorities that so many children leave their schools at an early date. Barring the factors of poverty and other like causes, the reason becomes lucid to the analyst. Is it not indeed because our educational systems in the past have failed to bring alike to child and parent the realization of the necessity for more mental equipment, for more and finer propelling power in the terrific struggle that is soon to encompass them? When the child has been imbued—and this is possible from the fifth grade on, according to modern psychologists, with the necessity for more scholastic training—then the task of the state becomes at once easier; and there is a greater probability of the removal of the relationship of step-child to the state.

The error in the past has, of course, been that the state administered its doses of education automatically from day to day irrespective of state or community needs. One of the arguments that the state might logically perhaps enter into its defence in this regard is that in the early days the state had little need to worry about the requirements and welfare of the child of legal age who left school; for the opportunities were then rife everywhere for the elicitation of out-of-school knowledge and its utilization. In other words, the individual in the past had ample opportunity to develop his mental and physical proclivities in the everyday pursuits.

The circumstances in those times were the ones requiring native forces such as foresight and courage. Their community work did for them what the state must endeavor to accomplish for its charges in the future. The new democracy demands a stage setting of economic conditions that will result in a perfect and amicable relationship twixt school and state in order to rectify with quality what the great world war has sapped up in numbers and vitality.

What is that you whisper, gentle reader? What about those influences that oppose the intimate relationship of school and state? The most aggressive argument advanced by these good folk suggests that the recent downfall of Ger-

many was due to her control of the schools by the state. That is it! Germany *controlled* the schools. Our state does not *control* the school, it is simply in partnership.

And then, Germany did not set out to primarily control the schools. She found thru her Junkers that the school was one of her details of community life that was shedding light. Now the militarists were one of the world's systems that could not stand the light of educational analysis, so the Junkers must, of course, needs control the source for the interest of Junkerdom. The German autocracy controlled not only their schools but the very system of original thought that emanated in her sphere.

For example, Schopenhauer, one of those whom German Junkerdom could not entwine in its grasp, in his *Wisdom of life*, openly accuses Hegel and others of the modern German school of philosophy of pandering to the wishes of German autocracy and making their systems of philosophy subservient to its desires. As for Nietzsche, the prop and mainstay of Prussian bureaucracy, he died in a mad-house, a fitting sarcophagus for the propagator of a perverted and erratic system that foreordained the rape of Belgium.

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III

MATHEMATICS AS A STUDY

It is a certainty that educational wisdom will not die with this generation. Never in our history perhaps have such perplexity and indecision prevailed as now relative to the ends and methods of education. Nothing is any longer simple or fixt; everything is in a state of flux. The parvenu educational iconoclast is abroad in the land, and with opprobrious assurance hesitates not to lay unholy hands upon our most sacred educational traditions and institutions. No science or subject of investigation is any longer of value in and of itself, but only in so far as it contributes to something else. The implicit motive back of all this attitude is one of vulgar utility which is regarded as the sole and only reason for the existence of anything. We are, then, somewhat in a state of educational anarchy in which, with characteristic unwisdom, the blind are leading the blind with the conventional result of all getting into the ditch.

Convincing evidence of all this may be seen in the naive educational innovations which are being proposed from time to time. Thus it is decreed that the classical languages, which have been such honored and fruitful instruments of science and culture in the past, shall be entirely eliminated from the curriculum of studies; the teaching of history shall be modernized and wholly revolutionized, whatever that may mean; the natural sciences shall be treated by new methods differing from the present both in extent and point of view; and literature shall be pursued in such manner as to develop the interest and taste of the student, not to train his mind. In fact the general method proposed aims to operate thruout within the compass of the child's normal and actual interests, rather than within that of the rigorous demands of science itself; in other words, we are to teach what the child desires, not what science requires.

One of the most astonishing effusions of this character is the recent declaration of purpose to practically eliminate mathematics from the subjects of study in our schools. A complete scepticism as to the value of mathematics has been raised. Thus in *A Modern school*, a publication of the General Education Board, Mr. Abraham Flexner says in substance that only so much arithmetic should be taught as people actually have occasion to use, which would shrink the subject to modest proportions; and even this reduced amount, in serving real purposes, would be given incidentally by the teachers of science, industry, and domestic economy, in connection with such subjects as the need arises. Likewise algebra and geometry would be treated from the standpoint of the other subjects which they serve, and would be taught in such form, in such amounts and at such times as the other subjects require. In this manner it is proposed to reduce the amount of mathematics by something like three-fourths, and the remaining fourth to be considerably modified in form. In harmony with this view Mr. D. E. Smith, in his work on *Teaching geometry*, maintains that all the facts of geometry which a skilled mechanic or engineer would ever need could be taught in a few lessons; all the rest is either obvious or commercially and technically useless. And Dr. David Snedden, in the *Preliminary report on the status of mathematics in secondary schools*, likewise has raised the question as to why girls in high schools or as candidates for college should be required to study algebra; and he has also urged that a knowledge of algebra is of no importance to men following the professions of law, medicine, journalism and theology. These are but samples of the prevailing scepticism concerning the value of mathematics as a discipline in our schools.

It is further maintained that perhaps nowhere else is failure so great as in mathematics. Even when a certain degree of success is attained it is held to be frequently unintelligent, since children often mechanically carry out operations in algebra only guided by arbitrary signs and

models, or learn only memoriter a series of propositions in geometry. The hollowness of both performances is held to be evident the moment a mathematical problem takes a slightly unfamiliar turn. Thus, it is pointed out, the child's helplessness exhibits a striking lack of both mathematical knowledge and mental discipline, and that this training thru failure can not be really valuable. It is also held that algebra and geometry are traditionally mainly deductive exercises, whereas practical living involves the constant interplay of observation, induction and deduction; mathematics as a deductive science, therefore, is unrealistic and valueless except in such minimum fashion as it may serve other subjects. The artificiality of conventional mathematics in general, it is maintained, raises a suspicion as to its value—even were the subject mastered.

Finally, it is especially emphasized that mental discipline, as a formal end in education, which has always been a paramount claim for the study of mathematics, is not a realistic end, since it is held to be an unproved assumption. At any rate, we are told, it is for those who believe in it to demonstrate how much good it does most children to make a failure in arithmetic, algebra and geometry. This would mean that all disciplinary value from the study of the subject is denied, and that even the knowledge of mathematics is of any significance only in so far as it usefully serves other sciences. All of which to the common mind is quite amazing! Indeed, in connection with this general mental aberration, the only lucid interval seems to be found in the attempted statement of the real problem at issue, namely: "Is the elaborate study of mathematical and spatial relations thru algebra and geometry a valid undertaking for its own sake? If so, neither the disinclination of the child nor the difficulty of the achievement is a reason for abandoning it. Disinclination and difficulty in that case simply put a problem up to the teachers of the subject."

But now we are ready to venture the judgment that such revolutionary conceptions relative to mathematics could have come about only from a complete ignorance of both

the real nature and meaning of mathematics and of the psychological processes involved in education. The proposals are so palpably erroneous and unwise that they might better be resisted by simply ignoring them were it not for the fact that they emanate from a rather influential source which has taken on the office of a widely advertised and militant propaganda which may perchance work either to intimidate the weak or entice the unwary. For this reason, therefore, in view of the general confusion, it is all the more necessary that we should seek to come to some rational understanding of the whole matter, which we shall find to be of a somewhat complex character.

In the first place we may observe that mathematical investigation, like that of all other subjects whatever, result in two supreme values, namely, specific knowledge and mental discipline. And so far as specific knowledge is concerned, mathematics may be studied as a science in and for itself, or it may be studied as the instrument of certain other sciences. Accordingly for a more complete understanding of the subject we may take up for a somewhat detailed consideration: (1) Mathematics as a science in itself; (2) mathematics as the instrument of other sciences; (3) mathematics as a mental discipline.

MATHEMATICS AS A SCIENCE

All science is a product of the knowing mind. It is absolutely necessary, therefore, that we take into consideration the general nature of the human mind which creates a given science in order rightly to understand the meaning of such science itself. In our present brief study, in the nature of the case, we can take cognizance of but a few of the more salient characteristics involved in the problem. The first fact to be emphasized is that the mind is unitary, and that all its powers are more or less operative in every conscious act or thought. The witness of this truth is seen in the fact that there is but one logic, that is, but one set of laws of thought. These laws of thought are always the same, no difference in relation to what subjects of inves-

tigation they may be applied. For example, the judgment is the universal form of all thought. The process of thinking, therefore, is simply a process of judging, and judgments must vary according as they are specially devoted to the consideration of different subjects in the several spheres of human thought. Furthermore the laws of logic, the universal forms of thought, are also common to all intelligence. Thus two times two are four to you, to me, and to all rational minds whatever. If this were not a fact, knowledge would be impossible. Consequently growing out of the unity and community of the mind there emerges the sublime principle that there can be but one true science in any given realm, and therefore but one true mathematics. That is, there can be but one mathematical truth in any given relation. In the nature of the case all science must be universal in order to be science at all. If it falls short of this it is not science, but mere conjecture or belief. Mathematical judgments preeminently exemplify the objectivity and universality of thought with a purity and certainty of truth rarely met with in any other field except in certain phases of those sciences which are mathematically determined. Thus the judgment that the angles of a triangle are equal to two right angles, is not a mere caprice of my own mind and special to me, but is a necessary truth in the nature of all intelligence.

In the problem of knowledge there are two possible factors: The nature of the knowing mind, and the nature of objective being—that is, thought and thing. Growing out of this duality of process are two kinds of knowledge, namely, rational and empirical.

Rational knowledge is that kind which is given in the nature and laws of reason itself. Since the time of Aristotle and particularly since the time of Kant it has been clearly seen that the human mind has in its innate being certain norms by which it proceeds in fixing, defining and relating its objects. That is, the mind contains within itself the forms or frame-work of all thought whatever. These immanent mental principles which underlie all articulate

experiences and make them possible have been called the categories. The categories simply exhibit the fact that the mind has a constitution or nature of its own which necessarily determines the character both of experience and knowledge. They are nothing more than the great forms under which experience is wrought, as space, time, motion, number, quantity, causation and the like. Logic itself is but an ordering of the implications of the categories. The laws of thought are but the manifestation of the categorical nature of the mind, and for this reason logic is formally the science of sciences.

Now mathematics is the purest of the rational sciences. Mathematics may be defined as abstract logic. Both logic and mathematics, the purely formal sciences, deal with relations which are, or can be, independent of all particular content, but admissible of any commensurate content whatever. Mathematics deals primarily with the three categorical notions of number, space and order or relationship. Arithmetic is the science of numbers in the abstract; geometry is the science of the properties of space; and algebra may be regarded as the science of order and relationships. All mathematical ideas admit of being referred to the one or the other of these three interesting but distinct spheres of thought. Like logic in general, mathematical propositions are not necessarily true in themselves, but if a given proposition be true of anything then such and such another proposition is true of that same thing. That is, mathematical propositions, like logical judgments, must be consistent with one another. The conclusion is true only when the premises are true; but the conclusions must always be consistent with the premises. Interdependence and mutual logical consistency is the only absolute requirement.

As a purely rational science, mathematics is basally intuitional. That is, mathematical concepts and judgments are formed from the immediate insight we have into the nature of our objects on the mind's own warrant to make universal statements about them and give them exact

definition. By combining the definitions and judgments we may proceed to still other judgments indefinitely. From the universal judgments we deduce particular cases. Thus in mathematics we have certain ideas of space, time, motion, number, about which we affirm some universal principles on our own warrant. These principles are perceived by intuition, or immediate insight, and from them we build up great and important systems.

As intuitional, mathematics is the most wonderful of the sciences in this particular. As a strictly rational science, pure mathematics can be spun out of the inner categorical nature of the mind, without any objective reference whatever. And for this reason it is the only theoretically perfect science. Immanuel Kant was the first to discover that mathematics was but the unfolding of the inner nature of the mind. He says, in his *Critique of Pure Reason:* "First of all, we ought to observe that mathematical propositions, properly so-called, are always judgments *a priori*, and not empirical, because they carry along with them necessity, which can never be deduced from experience. If people should object to this, I am willing to confine my statement to pure mathematics, the very concept of which implies that it does not contain empirical, but only pure knowledge *a priori*." Mathematics then is unfolded by the mind from within, and is the freest field of untrammeled, constructive thought, save logic itself. In mathematics the mind is left to the creative devices of its own ingenuity. And since creative thought is psychologically the most profound and educationally the most beneficial and fruitful of all our mental activities, the highest measure of all rational accomplishments, mathematics must indisputably offer one of the supreme fields for self-expression and mental discipline.

Mathematical thinking, therefore, is the most remarkable example of the rational nature, working wholly within the bounds of its own powers, to be found within the entire range of thought. It develops the creative reasoning powers of the mind, encourages and demands inventive

originality, which are the best and most to be desired of all mental acquirements. In mathematics the mind has the opportunity of bringing its own active powers into play and of giving expression to its own essental nature as perhaps in no other science whatever. And since education is not so much a putting of something into the mind as it is a drawing out or training up of the immanent potentialities of the mind, it would seem hardly possible to find any field of thought that would be a better discipline or offer higher possibilities for the unfolding mind of growing youth. And it may be regarded as a practical certainty that the inner essential powers of the mind will lack a certain unfolding and thereby be just so much dwarfed and impoverished if mathematics, the unbounded natural sphere of their exercise, be neglected. To think is to judge, and the exactness, rigor and certainty of mathematical judgments are unexcelled anywhere. And since we learn to think by thinking, and since mathematical thinking is not only the purest expression of the essential nature of the laws of thought itself, but demands an accuracy and consistency which is absolute in character, it must be evident to all that there is no discipline in the whole range of human interests superior for the elemental training of the growing mind. To eliminate mathematics, therefore, from the curriculum of studies in our schools would be little less than a policy of educational suicide. The great Kant again declares: "The instruction of children should aim gradually to combine knowing and doing. Among all sciences mathematics seems to be the only one of a kind to satisfy this aim most completely."

It has been held that mathematics is a pure deductive science, and has been criticised for that reason, since practical living involves induction as well. In our judgment this criticism is not well founded, in that mathematics certainly does involve a necessary principle of induction as well as deduction. In all thinking whatever both processes go along together. In mathematics, however, the generalizations, ordinarily reached by induction, are perceived by

the immediate and direct insight of the mind. That is, basal mathematical truths are intuitive. When I judge that a straight line is the shortest distance between two points, this generalization is not reached by any objective experience of particular cases but by the immediate intuition of the fact, which is a clearer truth to the direct insight of the mind than any added attempts at proof can make it. Intuition, therefore, has in it the highest quality of induction, since at best induction is only a sort of intellectual ladder by which the mind climbs up to a universal truth. Furthermore and more particularly it must be observed that in strictness induction can not pass beyond the several individual facts of experience. Thus purely inductively we would be compelled merely to say that so far as experience has gone certain men were mortal; we could not thereby declare the universal truth that man is mortal. This "inductive leap" whereby we transcend judgments of particular facts and come to the universal judgment is essentially deductive. Isolated facts are of no value and come to rational significance only as they are subsumed under universal principles. And ultimately the human mind itself must posit all universal principles by some power of intuition or immediate insight of its own, since universals nowhere exist in the realm of experience. Individual men die, but there is no universal man to die. Induction then is not so much a movement of thought from particulars to the universal as it is a movement from particulars to particulars thru universal principles. The aim is universalization for the explanation of all included particulars. In deduction, on the other hand, when we apply a universal principle to an individual case such deduced fact becomes only a new instance for the support of the universal principle, and when we think of it as such we are universalizing in an inductive way. Thus induction is involved in deduction, and deduction is involved in induction. But the superlative truth which we need to set apart clearly is that universal judgments with which deduction begins and induction ends can be reached in no other way than by direct

intuition or immediate rational insight into their necessity thru the unique universalizing activity of the mind itself.

The universal then is never reached and can never be reached thru particulars. Particulars only point the way by which the mind transcends them and by direct insight declares the universal truth. Hence the final proof of an induction must be that all necessary deductions can be made from it. Induction is helpless without deduction from which alone it gains the sanction of validity. When Sir Isaac Newton had induced the sublime law of gravity, that ponderable bodies attract one another directly as the mass and inversely as the square of the distance, in trying to prove it by the necessary deductions from the law he found that the relations of the earth and moon would not conform to the requirements. He used the most accurate measurements he could obtain regarding the size of the earth, but his results came out wrong. That is, the moon moved more slowly than it ought according to his theory. The difference was not great, but Newton could not overlook this lack of agreement with the observed facts. He came almost to think that nature had fooled him into believing in a universal law which in the end it denied him and not until sixteen years later, when Picart had discovered, from new and more accurate measurements, that the earth was larger than had been supposed, was he able to repeat his calculations with the corrected data and verify his hypothesis and complete the necessary deductions. Inductions gain fixity only thru deduction, and the major premise of all inductions and deductions must ultimately find its necessity and warrant in the mind's own immediate insight. Clear rational necessity is the final law of all valid thought.

From our previous reasoning it appears that intuitional knowledge, or, as Kant would say, *a priori* knowledge, is the highest and most certain of all knowledge—that upon which all science must ultimately depend and without which it could not exist. Accordingly deduction, which begins with universal judgments the necessity of which is

determined by the mind's own insight, may be regarded as an even higher rational process than that of induction which is in itself restricted entirely to particular cases. Deduction gives the law of validity to induction and finally rules all thought. Mathematics as a pure deductive science, therefore, meets the requirements of clearness, absolute necessity, and universality as no other subject. The criticism of the deductive character of mathematics then instead of being derogatory is rather commendatory, in that it implies the highest knowledge of which the mind is capable. Mathematics is a field in which the mind may freely revel with a sense of completeness and joy of perfection without compare; here the mind may mount up with wings as eagles, run and not be weary, or walk and not faint.

Discursive reasoning is a necessity of the finite mind; but to an infinite mind it is conceivable that even the most recondite and abstruse conceptions might be as intuitively clear as to us is the simple truth that things that are equal to the same thing are equal to each other. That is, we may suppose that a supreme intelligence would not have to mediately think as we do, but that to it all truths whatever would be immediately and intuitively given. Accordingly, we may say that mathematical truths, as basally intuitive, give our finite minds the opportunity of entering into a realm of thought which approaches in likeness the perfection of the infinite thought more than in any other discipline.

From this insight into the nature of mathematical thinking we are able to see that it is here that the mind exercises its most infallible processes in realtion to that kind of truth which is the aim of both induction and deduction, and thus enters into the most perfect and universal sphere of intellectual accomplishment. And since in mathematics the mind also proceeds by creating its objects by definition, there is unlimited possibility for original invention; it can make these objects of thought anything it will. It is bound only by the law of consistency. It is impossible, therefore, to see how the young mind could employ itself in any field to greater advantage in the development of its latent powers.

No subject offers greater range of originality and creative device combined with exactness and rigor of thinking than is found in mathematics, and its elimination from the curriculum of studies would be an irremediable loss.

MATHEMATICS IN RELATION TO OTHER SCIENCES

In empirical thinking, on the other hand, the mind transcends itself and seeks to gain a knowledge of objective fact. But even here it must be evident that the objective existing thing can become an object for us only by our thinking it or constructing it in thought and thus making it our object. The object never comes into our minds, and our minds never go out to the object; there is simply an unpicturable interaction in which the mind creates within the vision of the world as we find it in perception. In the rational sciences our universal propositions are the expression of immediate insight or are reached by general reasoning which takes no account of particular cases. Thus, if I know that $S = {}^1/_2\ gt^2$ and $v = gt$, I have the whole science of uniformity of accelerated motion, and a law for all possible cases. The same is true of mathematics in general; we reach the universal without the slightest consideration of particulars. In mathematics we define our objects from within; in nature we define our objects from without. And for this reason we can not say what the hidden nature of outer things implies; an *a priori* science of nature is impossible, or at least possible to the slightest degree. Early ages sought to construct nature in this way but with vanity and vexation of spirit. In nature we have to obtain our universals from a consideration of particular cases, and inductive method is the only way of approach. For this reason the natural sciences have been much slower in their development than mathematics. Not only so, but they have been dependent upon mathematics as their only instrument of exact expression.

The categories of thought apply to all contingent objects but completely express none. In so far as the categories express objects an *a priori* science is possible, but only in so far. For example, if objects have regular form,

outline, and area, we can determine their properties by geometry; in so far as countable, the category of number applies by arithmetic; as events, the categories of time and causation apply. But these formal relations are far from exhausting the objects. The specific qualities and characteristics of nature are not told thereby at all. So far as the abstract categories are concerned, any number of other worlds are as possible as the actual one. The study of nature, therefore, is far more complex and uncertain in method than mathematics, and for that reason is hardly as good a subject of investigation for young minds; it may properly come later with better advantage. Altho the human mind is the instrument of all knowledge yet it is evident that in the case of empirical facts the mind can not proceed upon its own warrant, but must construct its knowledge in harmony with the phenomenally given conditions.

We have seen that mathematics is best calculated to develop the innate powers of the mind itself. But mathematics as a formal science, the science of the ideal, also becomes the means of investigating, understanding and making known the world of the phenomenal. By mathematics we bring the objects of the phenomenal world under the control of the conceptions of number, quantity, and relation. Mathematics thus becomes the science of the functional laws and transformations which enable us to convert figured extension and rated motion into number. Applied mathematics, therefore, seeks to discover the equations which express the laws of phenomena. As the object of pure mathematics is the unfolding of the laws of human intelligence, so the object of pure physics is the unfolding of the laws of the intelligible world. Mathematical concepts and principles extend to all objects and changes of the phenomenal world, and the consideration of mathematical relations forms a large part of many of the sciences which treat of phenomena and the laws of external nature. Astronomy, optics, mechanics, physics, and chemistry to a degree, are notable illustrations.

The Pythagoreans nearly 600 B. C. for the first time pursued mathematics independently and brought it to great perfection. They were especially impressed with the immaterial in matter, the order which prevails in the world, the unity, proportion and harmony in its contrasts, and the mathematical relations underlying all things. In geometry, in astronomy and in music everything is ultimately reduced to number. Hence they affirmed that number is the principle and innermost essence of the world. Things are sensible numbers; every being represents a number, and the final goal of science is to find for each being the number for which it stands. Number is being. They represented number as the ruling principle in space relationships. In music their harmonies show an exact knowledge of the simple arithmetical relations, as string lengths and the like, out of which musical melody arises. Also the regular revolution of the stars, of which they made the most careful measurements, made the world-order appear to be numerically determined. Thus their theory attempted to determine mathematically the permanent relations of cosmic life. Since abstract numbers and number relationships are found in many different things and processes, numbers are the original forms which are copied by things. This is the same as saying that the abstract mathematical numbers are applicable to any concrete cases. It appears, therefore, that the basal truths of their conceptions had firm foundations, that the mathematical relations are applicable to the measurement of the phenomenal order of things. The Pythagoreans did not understand the pure formal and subjective character of mathematics, but they did appreciate the fact that the science of phenomena was possible only by means of it. Mathematics, with its unlimited possibilities, filled their minds with romantic wonder and expectation. And with justice, for this expectation has been fully realized in the application of mathematics to the physical sciences, especially astronomy, physics, mechanics and engineering. In fact the scientific conquest of natural phenomena in many relations has been made possible only

by the agency of mathematics. We may say, in fact, that the aim in every science at the present time is to reduce every body of fact and phenomena to a quantitative and numerical equation so far as possible. Even the Mendelian law in biology takes on this character, and the statistical formulations of the data of economics, sociology, psychology and even ethics strive to realize such mathematical expression as is possible in their respective spheres. And no approach to an exact science is even possible without the assistance of mathematics.

It is evident, therefore, that a high degree of knowledge of mathematics is necessary for the prosecution of natural scientific studies in the special realms which are peculiarly dependent upon it. The study of mathematics then must be pursued, if for no other reason, in order to understand at all the phenomena of the world in which we live; and certainly nothing as an object of knowledge can be more obligatory, useful and desirable. But when it is suggested that the study of mathematics should be pursued in connection with such subjects as the need arises only, there is no teacher of astronomy, physics and mechanics, for example, but that well knows if he had to stop at each juncture of need to teach the mathematics upon which his scientific principles and calculations rest he would not only never get forward with his given science at all, but that both his subject and the mathematics upon which it depends would be brought to a disjointed chaos. In the nature of the case there could be no real mastery of either the mathematics or the science to which it should be applied. All of which would be to pervert the best advantage of both subjects. This is not to say but that in the teaching of mathematics it may indeed be well to make it as concrete and applied as possible. But since mathematics is a great system of knowledge in which one principle is built upon another in mutual relationship, it is evident that the mathematics involved in physical theories is so complex as to require a knowledge of the whole underlying system in order to gain the perspective of its application in a given case. Hence the

teacher of physics would have to go back and give the entire course of mathematics required as a foundation of the specifically needed principle before he could advance a step further in the instruction of his special science. And nothing more uneconomical and unintelligent could be devised in educational method than this. We must unhesitatingly declare that mastery in either subject implies the required mastery in both. By the attempted conglomerate study of mathematics with other subjects as the need might arise, we could never gain a comprehension of the organic unity either of mathematics as a science or of physics, astronomy, or other subjects to which it is applied. The proposition is puerile and visionary. Concrete physical principles may be used to illustrate mathematical truths, but profound mathematical insight is necessary to guide in the theories of physics. Descartes pointed out as proof that mathematics far surpasses in facility and importance the sciences which depend upon it the fact that it embraces at once all objects to which these are devoted and a great many others besides. It is just because mathematics is so great a formal science and is applicable to so many phenomenal realms that it, like logic itself, should be mastered as the common instrument of science. For this reason alone the study of mathematics would be justified, if for none other. But without the mastery of mathematics first, its attempted application to the several sciences would be foolishness.

MATHEMATICS AS A MENTAL DISCIPLINE

Heretofore it has always been regarded as a fact of universal experience that the human mind becomes disciplined by action. That is, by the study of any subject in a thoroly scientific manner the mind has been supposed to acquire a certain increment of power, dexterity and ability. This pure disciplining of the mind has been termed formal training. The possibility of such discipline or training has never been questioned until comparatively recently. And even now scepticism has arisen concerning it, not from the facts

of experience, but from the adroit legerdemain of certain psychological experimentalists who have developed an ability deceptively to demonstrate to their own satisfaction any presuppositions with which they start out. Following blindly this lead certain would-be educational reformers maintain that "mental discipline" as a formal fact is an "unproved assumption." It is likewise held that there can be no transfer of training; that is, the study of any one subject aids not at all in the study of any other subject, except in so far as the elements of knowledge in the one are of like character to those in the other.

But over against this notion, just as the most unsophisticated man knows that in using his muscles he gains strength thereby, so likewise he knows that in using his mind he gains intellectual power; and as in using the muscles of his arms in chopping wood he gains a muscular strength which may be transferred or utilized in the driving of a nail, sawing a board, or any other function whatever in which such muscles are employed, so in like manner it has always been a matter of common knowledge that, since the judgment is the universal form of all thought, in training the mind to judge, say in the study of Latin, biology, or what not, we gain a mental strength or power which can be transferred or applied upon occasion to the study of mathematics or any other subject. And the ground or reason for all this we have found to be in the fact of the unity of the mind. There is but one mind which thinks, and the same laws of thought are used in all mental processes whatever. The same laws of the mind are operative in the study of Latin as in mathematics or any other subject. In learning to think, to judge, and scientifically to study any subject, therefore, we thereby train the mind to get possession of itself and awaken it to skill in the enforcement of its own laws. And in gaining a mastery of the formal or subjective laws of thought in the training of the judgment we acquire a power of thought which may be transferred to or used in any subject to which thought may be directed. In thinking we use and train the whole mind.

It must be admitted that the knowledge of any one subject can not aid at all in the knowledge of any other subject, except in so far as there is a likeness of the elements of knowledge in the respective subjects. But this is a wholly different matter. If we hold that the mind gains no formal or subjective power from the study of any given subject which may be transferred to use in the prosecution of the study of any other subject, we must implicitly maintain that the mind is not unitary but made up of compartments, and that in exercising any set of laws or powers in a given subject such laws alone are involved and other sections of the mind are thereby untouched. And this would mean that there must be a different logic, different laws of thought, for every different subject in so far as they are different. But this is absurd, and would make knowledge itself impossible. Such a view would also invalidate all the significance of a liberal education and a college course would be worse than a waste of time as a fitting for life in general. The greatest thing in all education is the gaining of the mastery of the use of our minds. Education is far less valuable in the knowledge we acquire than in the mental power and discriminative judgment developed by the process. Instead of mental discipline being an unproved assumption and accordingly useless, it is the most potent fact of all education and is the supremest value the student ever gets out of his course of studies. The actual knowledge that even a college student ever gets out of his course and carries with him into life is a veritable minimum, and were it not for the trained mind, the superior development of mental powers which he may apply in any field of endeavor which he may elect, the perennial derogatory criticism of the college graduate would be entirely justified. Formal training or mental discipline is a self-evident fact in all educational experience. For this reason the college-trained man has always been sought for responsible labors of every character where mental power is demanded, and such training has been found from experience to be a necessary prerequisite for the best accomplishment in law, medical and other professional schools.

In this connection, also, it must be pointed out that only a few psychologists have ever claimed to find by experiment that there is no formal discipline and no transfer of training, whereas many others have claimed by experiment to exhibit the opposite result. This fact brings the whole process of experimentation into question. It would seem that the psychologists are either incapable of performing the complex experiments required or are unable rightly to interpret their own experiments. There is something wrong with the experiments or the experimenters. We submit to educators, then, that it is not well to be too hastily stampeded by the assertion that mental discipline is an unproved assumption, but rather to recognize the fact that centuries of educational experience has been the best possible psychological experiment by which to test the fact of mental discipline and the transfer of training—facts than which there have been none more certain. The most carefully conducted experiment is that of Rugg, in which the coefficients of correlation were found to be: For mathematics and descriptive geometry, 0.70; for mathematics and foreign languages, 0.50; for mathematics and English, 0.40. We have here, therefore, only to insist on the claim of mathematics as a unique mental discipline, which develops the inherent powers of the mind, and enables it to give expression to its own categorical nature in original creative thought with a clearness and exactness offered in no other subject, and accordingly as peculiarly fitted for the development of the unfolding mind of youth.

There is no great science but that is worthy of study for its own sake. The very possibility of such a science is evidence of the fact that it is a field for mental conquest. To master it, therefore, is in itself a worthy object. Complete scholarship could never stop short of this. Knowledge in any sphere is worthy of possession for its own sake, for the pure joy of knowing. In this spirit the Greeks believed that wisdom alone was virtue, and Spinoza regarded philosophical contemplation of the world necessity as the supremest intellectual and moral beatitude. There is pub-

lished by the Carnegie Institution of Washington a marvelous mathematical work on celestial mechanics by George W. Hill, an American scholar, of which President Woodward has said there are not perhaps ten men in the world who can read it intelligently. If it be asked what possible use there can be in such mathematical speculations, the answer must be for the sake of science itself. But also, we might add, for the sake of such practical results as may come from such science. Poincaré's great mathematical speculations on the problem of three bodies were based on the work of Hill, and he had the reputation of being the greatest philosophical mathematician in the world. It is said of Pythagoras that, when he discovered how to demonstrate the theorem "the square of the hypotenuse of a right-angled triangle is equal to the sum of the squares of the sides," he proceeded to celebrate the event by sacrificing a hecatomb of oxen; and we can conceive of no occasion on which the desire to honor God would be more fitting than upon the discovery of an infallible universal truth. All truth is divine. And with Kepler, we may say, when we read the secrets of nature we are but thinking the thoughts of God after Him.

The so-called realism in education is but another name for utilitarianism, which tacitly assumes that no education is really valuable unless it ultimately yields dollars and cents or that which is practically serviceable. But this is an unworthy conception of education. If the college student were never to use his education in such way as to earn a dollar, it would be to him nevertheless his most valuable possession, for the reason that it alone would enable him to truly live in any high and worthy sense. By it he is enabled intelligently to enter into all the currents of spiritual life of his age and time and appreciatively to comprehend and enjoy them. He is thereby companion of the great of all the ages in literature, science and philosophy. Instead of one who only eats and breathes and sleeps, he is a rational and intelligent being. Education must be for an exalted life, not merely for making a living. We have seen

that mathematics serves a unique function in this education in the development of the native mental powers. But we may say that in general it is not so much what we study as how we study it. Mastery, and again mastery must be our educational shibboleth. And the demands of science will be satisfied with nothing less. A real mastery of the great fundamental sciences, of which mathematics is not only one o the greatest in itself but also one of the most useful in its service to many other sciences, is indispensable as a foundation for true scholarship. Any improvement in the methods of teaching must be welcomed. But instead of eliminating mathematics from our studies, we must seek rather to increasingly perfect and enlarge it.

When it is asked, does it do the student any good to fail in mathematics, we answer that it does him the same good as it does to fail in any other endeavor whatever, and it is a matter of common knowledge that children do fail at first in most things. But we must be willing to fail in the beginning of anything if we will at last succeed. Did it do Demosthenes any good to fail in his first oration? Failure is most certainly a great good if it but steels our resolve to triumph. Trial and error are the universal agencies of progress, and the road we fallible creatures all have to travel. And only those who are willing to fail will ever succeed. It seems that anyone who raises such a question relative to the acquisition of a great science must have forgotten all he ever knew about his own intellectual history. Where there is the will there is the way, and if there be not the will education and all accomplishment are hopeless.

It must finally be admitted that the time spent in the study of mathematics may differ according to the purposes in given cases. To the skilled physicist, mechanic, or engineer a mastery of mathematics is a great asset, even if the facts he would need could be learned in a few lessons. It would be found that the student with the few lessons proposed would soon break down in the real mastery of the applied sciences, for the reason that his mathematical

knowledge would lack perspective, and he would be wanting in vision. To say that girls need no mathematics, and that students of law, medicine, journalism and theology need none, is to say that in these callings men and women need no actual development in one of the mind's greatest potentialities. If we say we do not need developed minds in these relations the point might be granted; but otherwise there is as much need of mathematical training as in other general vocations. In brief, the conclusion concerning mathematics is: All need some; some need all.

Perhaps no instruction is so difficult in the beginning as that in mathematics, since young minds are disinclined to be harnessed with the necessity of rigid logical conclusions. But not what the youthful mind desires, but what science requires must be the standard of instruction. If American scholarship would reach that exalted position we crave for it, then instead of minifying the great fundamental sciences we must set our wills to a more thoro and profound mastery of them all; and instead of practically eliminating mathematics from the curriculum, we must study it as never before. Nature causes our bodies to grow spontaneously and naturally; but nature never made a mind capable of intricate thinking, without a lifetime of discipline and faithful endeavor. Who ever became a scholar but that knows the toilsome labors required to build a potent, thinking mind? As the excellent Berkeley declared: "He that would make a real progress in knowledge must dedicate his age as well as his youth; the later growth as well as the first-fruits, at the altar of Truth. *'Cujus vis est errare, nullius nisi insipientis in errore perseverare.'* "

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IV

IS THE LONG SUMMER VACATION NECESSARY?

In connection with the all-year schedule for colleges now being given serious consideration it is pertinent to remark that two great American schools have always been run on practically such a schedule, and with marked success. These are the Military Academy at West Point and the Naval Academy at Annapolis. With the exception of one month's leave, the month of September, the midshipmen at the Naval Academy are kept busy all the year round. The academic term extends thru eight months, or from October until June, broken only by an occasional national holiday. The months of June, July and August are spent in practical work on board the ships of the navy. But even this practical work has an academic coloring inasmuch as midshipmen have to make close and continued observation of the details in their assignments and to record them in voluminous notebooks. In a sense, therefore, they are under instructions for eleven months out of the twelve. Furthermore, the members of the entering class are in the harness, so to speak, for fourteen months before they get a rest, since from the day of their matriculation in June until October 1st, when the academic year begins, they attend lectures and do considerable reading in naval history under the supervision of the English Department, and from then on until the following September they follow the regular Academy schedule. At the Military Academy vacations are still rarer, for the cadets are allowed but one month's leave of absence during the entire four years' course.

Now the graduates of neither the Naval Academy nor the Military Academy are broken in health from such a continuous strain, nor blear-eyed from too much application to books. On the contrary, they are physically in better

average condition than are the graduates of other institutions. This is probably because quite as much attention is given in course to the physical side of the men as to the mental. Play is allowed at regular periods, at least enough to avoid the lugubrious possibility suggested by the proverb about "All work and no play," while daily drills and other physical exercises conduce to the same end, and at the same time build up the body to keep pace with the mind. The result is our military and naval graduates are alert mentally, and most of them are well-built specimens of physical manhood. They have gone thru four years of almost continuous schooling and have come out rather able men on the average. Indeed, if we could add together the mental and physical efficiency of these men and somehow strike an average, I feel confident that it would compare very favorably with, if not considerably exceed, the average mental and physical efficiency of the graduates of any other American college.

If the average product turned out each year at West Point and Annapolis is, at graduation, a more efficient member of society than the average college graduate, it must be partly owing to the continuous training he has been under. I say, *if* he is a more efficient member. I can not prove that he is. Neither the army officer nor the naval officer is educated so widely. He may not know so many things as his brother who has attended some other American college, but he has learned two things very well. One is the value of time; the other is the necessity of thoroness. Whatever task is set him he is likely to do it at once and to do it shipshape and out of hand, as the sailors say. I do not find this readiness and this sense of completeness so evident among graduates of other institutions, but rather the tendency to do things in a more leisurely fashion and to be satisfied merely to do them well enough. If such a tendency exists it must be partly the result of their having obtained their education in a less intensive way. Life at an American college is no very strenuous affair, if the writer's own experience is any criterion. When the gradu-

ate comes to reflect upon his student days they seem to have been on the whole rather free and easy. As for the long summer vacation, business and professional life have not allowed him any such jolly loaf, and it never will. These facts perhaps explain why so many college-bred men are, at graduation, neither educated nor efficient in any high sense of the terms. The colleges have not required their utmost of them, and the summer vacation has let them lie fallow all too long. At our two government training schools, on the contrary, young men are held to an intellectual and physical attention, so to speak, for eleven months out of the twelve, and the result, at least so far as the capability of the individual graduate goes, is remarkably good.

The success of these two schools, then, in preparing young men for efficient service should dispel the generally accepted notion that students need the long summer holiday for mental and physical recuperation. Children may, but college students are no longer children. They scarcely need so long a period of relaxation, and more yet, many sadly misuse it in ways too numerous to mention. The mental strain of required college work is not, as a general thing, so severe as to require all summer for recuperation. The cause of breakdowns among college men is not usually the mental strain to which they are subjected, so much as it is the lack of any regular system of physical exercise. College men are prone to sadly neglect this feature of their life or else to devote altogether too much attention to it. At our naval and military academies, however, the training is more carefully balanced. The strain of eleven months of steady application is modified by well-balanced and well-distributed physical exercises. Hence, altho the schedule at these academies is long and severe it is very rare that a cadet or a midshipman suffers either a mental or a physical breakdown during his course, or shows signs of rapid deterioration within any reasonable time after graduation.

Now the general excellence of the graduates at West Point and Annapolis would seem to indicate that youths

who have reached the age and maturity of mind required for entrance to college, and who are in reasonably good health, not only do not need to give up anywhere from a fourth to a third of each year to vacation, but might profit considerably if their vacation time were reduced. Boys in their latter teens might better use a large portion of this time in the preparation for the real work of life. Many do so who are especially ambitious; on the other hand more do not. Having dropt their books and practical work they proceed to forget much of what they have just acquired and do little that has a direct bearing on the future. So the summer goes by, and little is accomplished. Water wastes at both the spigot and the bunghole. The youth who should be storing up knowledge and power for future use is for several months storing up very little except in a very hit-or-miss fashion; he is mainly marking time. His preparatory period is thus lengthened unnecessarily, and both he and the community suffer a certain loss in efficiency—not to be accurately estimated, of course, but nevertheless a loss.

Of course there are certain obvious difficulties in the way of lengthening the college terms. How would this affect the poor boy who utilizes the summer months to acquire the money to pay his expenses for the college year to follow? And how about the teacher who would thus be deprived of much of the leisure which he has come to regard as an inseparable part of his profession, and which he thinks he must have for reading, recreation, or research? And then there is the matter of additional finances. These objections are of moment and deserve consideration. But they are not insuperable, and even if they were more weighty than they are it would still be pertinent to ask: What are our colleges for if not to prepare young men for the serious business of living the best lives that they are capable of? And what are teachers for if not to assist these same young men to the fullest extent of their ability? If the present, old-fashioned method of running our higher educational institutions somewhat intermittently for three-quarters

of the year and then letting them stand idle for one-quarter does this as well as it can be done then by all means let us make no change. But it is well to note right here that no other successful business in the world is carried on in quite so easy a fashion, and the business of education is probably the most important business that we know anything about.

It is not, however, the purpose of this paper to suggest the proper length of the collegiate year, but merely to call attention to the fact that the courses in two world-famous government schools do not embrace lengthy vacations, yet the average of the yearly output, to express it in business terms, is high. Neither is it the purpose of this paper to advocate military discipline for all our higher institutions of learning. It would be a mistake to turn our fine colleges, with their scholarly traditions and their atmosphere of quiet culture, into military camps, where spiritual productions might become secondary to the pomp and circumstance of war. Yet the success of both these military institutions in producing capable men would seem to indicate that some of their features might well be copied by other colleges and universities. Perhaps it is a stricter oversight over the habits of the students; perhaps it is a less broken, more continuous course of study; perhaps it is both. Modern life demands more and more the elimination of waste, not only of materials but of time. Where college students are allowed to go and come pretty much as they please, and where the college terms allow considerably more time for relaxation than the ordinary student needs, the result is a loss of time; and time lost is usually time wasted.

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V

THE HEALTH PROBLEM FROM A NEW ANGLE

The ending of the greatest war in history in the complete overthrow of the autocratic rule of Germany and in the complete victory of the democracies arrayed against her marks a great advance in the political freedom of men. With political liberty and personal freedom ever prominent aims in human society, we have had to learn by intense and hard combat that liberty is not in itself something to be expected as a natural result of social organization. War should not be necessary for the attainment of liberty, but those ignorant of history and economics and inclined to conceive liberty "as among the raw products of nature's cosmic forces" are not helpful in achieving another method. On the contrary, political liberty and individual or national freedom are the result of far-seeing vision, clear intelligence and vigorous purpose.

Because the mind and heart of the world are in tune with the yearnings of men and women to be free and appreciate their purpose to achieve liberty, the time has past when the political freedom of man can be put in jeopardy. It is therefore pleasant to believe, and it is rational also, that never again will kings or emperors, either with a philosophy of Divine Right or any other shibboleth, enslave the minds and bodies of men and women to the extent seen in Imperial Germany.

We like to believe that with the freeing of Germany and her allies from the power to exert her will in the matter and with the inculcation of the doctrine of humanity in the affairs of the nations, man has attained complete political freedom from the sort of arbitrary and irresponsible rule that at one time was common in the world and only lately removed from the one modern nation of power, wealth and influence. With this new consciousness we

speak bravely and smile serenely at the thought of tyranny.

But there are tyrannies more subtle and more dangerous to our happiness and welfare than those lately overcome. We talk rather freely of freedom and altho it is generally understood that by that word we mean political freedom, it is important to point out at this time that the men and women of the world are tolerating a bondage, are enduring a slavery, as definite and real, as avoidable and as unnecessary, as the political slavery that fills the pages of history.

The wars of the world have been wars of conquest and fights for freedom, but we are awake scarcely to the possibilities of personal freedom from disease, from unsatisfying and unwholesome instinctive habits or the glories and rewards from the overthrow of silly customs and foolish traditions. To continue the analogy we may say that health, vigorous and fine, does not follow in these days of complex social organizations as a natural result of nature's forces. In a purely vegetative or instinctive existence that might be true but in civilization as organized, health is something to have by birth or to be attained, in either case to be kept by care and intelligence.

In these days with the recent victory over autocratic power fresh in mind, we are prone to talk about "life, liberty and the pursuit of happiness" and "that every man is born free and equal." It is amazing, however, to find that we are naive enough to believe that people will continue to accept such untruthful statements. Where is the equality that permits a child to be born of syphilitic parents? What opportunity has the child with opthalmia neonatorum to secure happiness as the seeing know happiness? Where is the equality that permits a child to grow up in a home where tuberculosis is active and menacing—without any of the known safeguards? If "born free and equal" is to be interpreted as meaning equality of opportunity, what chance has the rural child? If happiness is in any way lessened by poverty and disease, what is to be said concerning the following recent figures by the Life Extension Institute:

"Out of every 100 healthy men who are 25 years old today, statistics indicate that 36 will be dead at 65; 53 will be dependent on relatives or charity for support; only 5 will be well-off; only 6 will be self-supporting."

The following quotation from a London letter indicates the slavery, the oppression of disease, the devitalizing forces in society that make our civilization incapable of achieving happiness and liberty for the great mass of citizens. The situation described in England can be duplicated here. The Selective Draft has shown that.

THE NATIONAL PHYSIQUE

London, Nov. 5, 1918.

"In the *Observer*, Professor Arthur Keith discusses the question of the national physique. He refers to the declaration of the prime minister, Mr. Lloyd George, who asked the minister of national service, 'How many more men could we have put into the fighting line if the health of the country had been properly looked after?' and was told, 'At least one million.' In the course of voluntary work at the ministry of national service, Professor Keith obtained the results of the surveys that are being carried out all over the country by the medical boards in the examination of recruits, and that the prime minister has understated the seriousness of the position. Dividing the population into four grades, he considers that if 1000 young men may be taken at random and graded according to their physical fitness, the following should be expected under good conditions: Grade I, 700; Grade II, 200; Grade III, 75; Grade IV, 25. Grade I includes men fit for general military service, and Grade IV men unfit for any of the duties of a soldier. Grades II and III are intermediate. The actual figures obtained from a large industrial town were: Grade I, 190; Grade II, 270; Grade III, 410; Grade IV, 430. The objection, however, may be raised that the present population of our towns is merely a residue left after the departure of the fit young men to active service in the earlier years of the war. After the age of 30, men tend to become degraded, that is, to pass down the grades. On turning to trades that have been exempted from military service in the earlier years of the war, the objection just made is largely removed; but the figures remain very serious. They are: Grade I, 270; Grade II, 152; Grade III, 158; Grade IV, 420. Professor Keith attributes these results to slum life. Slums produce children who become men of Grades III and IV."

Yes, it is an old story after a fashion. Disease, deformity and ignorance stalk abroad over the land. In that particular sense, then, we are not free, and we shall hardly attain freedom by the usual and lazy phrases about human nature and what has always been.

The long list of preventable diseases, the inherited taints and stigmata of degeneration, the whole line of neuroses

that hinder the efficient functioning of society, the inadequate regulations and controls in industry, the paucity of health education, the millions living selfishly below their best, the lack of social sense and attitude in those who are ill, the wholly inadequate physical training of children, the character and extent of our recreational facilities—all indicate with a clearness that should arouse action the fact that we are slaves, that we are not free.

The health work in America, as in Europe, has been based upon medical inspection, disinfection, isolation, quarantine and school gymnastics. We have recently been following Germany and England in agitations for health insurance and old-age pensions. We, as they, have been dealing with the mere checks on disease and deformity. Such procedure alone is a failure. All the purely regulatory checks are in themselves insufficient. We have been trying to control the primary springs of action by drills, placards and newspaper illustrations of model tenements.

It is therefore stated that the health problem requires:

1. A new approach which shall consider motives. Nothing less than an interpretation of life, its aims and purposes, will satisfy. The fundamental purpose of health must be set forth and the possibilities of a magnificent life outlined.

This is so because the usual and traditional methods are not getting results and because this approach concerned as it is with motives is fundamentally right. It should be pointed out that this approach will also indicate the direction for solving so many of the perplexing social problems of the day. Education has informed people of the causes of disease, the dangers of certain practises and habits. The school naturally is the strategic place for launching the attack, but knowledge alone is not sufficient. The whole field of hygiene must be invigorated with purpose. The interpretation must be in terms of fine living and may well be made in terms of a magnificent life.

2. The health problem requires, in addition, adequate and effective provision in society for control of the factors

that can not be or are not cared for by the individual and that influence health, so that all may have the fullest liberty and opportunity to live magnificently.

The checks and control now in existence have been incomplete and ineffective. Much of the success in this direction will come only with proper education of the needs and desirability regarding control. In some instances it will be desirable to set minimum standards. Certain it is that congenital disease, sources of infection, light, air and food, working and living conditions in which groups are endangering health, recreation and education will come within the scope of the control that society should exert.

Because men and women of the modern world are submitting to an inheritance of disease, to a perpetuation of vicious custom, to a slavery of mediocrity in health and power, to preventable losses that hinder happiness, sincere and intelligent efforts must be put forth on the fundamental problem of national and individual health.

Ignorant and superstitious peoples still believe in the punishment theory. God's wrath in the form of sickness is to these simple minds a way out of the great world of unknown things. On the other hand intelligent and well-educated people constantly live below their best and frequently sacrifice health in the pursuit of selfish and altogether unworthy ends. Between these two extremes there are millions lost in the quagmire of physical weakness. To all must come the opportunity to live a magnificent life and therefore controls must be exacted everywhere; and to all the possibilities of fine living, with proper motives supporting individual effort, must be set forth.

Scoffers will everywhere attack such proposals; skeptics will indulge in the usual doubts. It is therefore important before elaborating the subject to come to some understanding of the nature of man in the effort to find a ground for our argument on the one hand and a place to tie to on the other. The liberty is taken of stating positively that human nature is not static. It remains at this point to indicate the reasons for this fundamental belief.

HUMAN NATURE IS NOT STATIC

One of the most common and groundless beliefs is that conveyed by the statement that "human nature is human nature." The connotation here is that man has always reacted in one way with reference to his habits and customs and that he always will respond in just that way. It is equivalent to saying that man is a beetle. It would be as illuminating to remark that governments are governments, that civilization is civilization.

What are the facts in the matter? Is man today by nature any different from the man two thousand years ago who met the problems of that time, or is he essentially the same? It is accepted today that the German soldier in the conduct of war has shown types and forms which would compete favorably with the East Indian, for example, who mourned grievously if he did not strangle as many travelers as his father before him. On the other hand, such rare examples are not typical of the civilizations represented. It is more important to indicate the ideas of dominance in the world today and compare them with those prevailing a short two thousand years ago. Such comparison shows that we have progressed immeasurably as regards our attitude toward women, and the modern phrase social justice has included women in its programs. The conscience of man is more active and is less individualistic. We are more willing to render service for others. We have less superstition as regards religion in forms and creeds and are more exacting that verbal expressions show in actual deeds. We have a greater solicitude for the care and training of children. We are more humane as regards the sick and old.

Human nature has evolved. Man today is a finer, more ntelligent mechanism in work, in play than he was generations ago.

The dynamic character of human nature is gaining recognition in all fields of action. It is not unusual to find its expression in unlooked-for places. A recent magazine writer, feeling his way toward this position, says in a splendid story:

"It is commonly said that whatever our personal vicissitudes, human nature remains the same; but tho that may be true of the past, I doubt if it will be true of the future. War on the scale on which we are waging it has already changed human nature. It has changed it as the years change a baby to a boy and a boy to a man. It has lifted human nature up, drawn out of it what we never supposed to be there, freed it from its slavery to time. . . . . We have seen youth doing the work of maturity, maturity that of youth, women that of men, men that of women. We have seen cowards transformed into heroes, rotters into saints, stupid, idiotic ne'er-do-wells into saviors of mankind.

"We shall never go back again to the helpless conviction that youth must grow slowly into age only to have age decay into ugliness and senility. Since we have thrown off our mental shackles in great moments we shall see that we can do the same in small, and having emerged on a higher plane, we shall stay there."

This is the sort of spirit that looks at man as progressing in an evolution in which the physical is in abeyance and the mental and spiritual elements predominant and active.

But there are those who think only of the instinctive side of life when they speak of human nature. They are perfectly willing to attribute to man an increase in sense of right, a finer and more wholesome point of view in all fields of intelligent expression, but they are unwilling to admit any improvement or any reason to expect improvement in such a matter, for example, as sex. The sex instinct is, in the minds of this group, so all powerful, pervading and established that one can not expect modification from the usual and traditional in this field of life. In other words they are saying that we must expect children to be born hopelessly defective just because the sex instinct in the father could not be controlled; that it was unseemly to inform the mother as a young girl of what she ought to expect of the man she married. In another light, this view means that our hospitals must continue to care for more syphilitics than any other group of patients, that our medical students must know syphilis and gonorrhoea better than any other disease in order to practise successfully, that the great number of still births must continue as before, that the estimated number of abdominal sections on women for conditions due to gonorrhoea contracted from the husband must still stay at the top rate of 70 per cent, that

insanity in New York state, for example, will continue to give syphilis as a cause in 25 per cent of the cases in institutions, and that the institutions for the blind must still register its victims of gonorrhoea ophthalmia. Those who hold to the view that human nature is static must subscribe to the famous epigram of Osler that the history of civilization is the history of syphilization.

The attitude with reference to human nature and the sexual life is so striking that it serves as a clear cut illustration. But it must be remembered that this attitude is reflected in many ways in response to problems that are in no way sex problems. Many of the opinions concerning tuberculosis and cancer and most of the preventable diseases reflect this thought of the static nature of man. The prevailing attitude regarding senility, exercise, and many items of personal hygiene shows the same fundamental lack of vision and understanding. It is important therefore to investigate this point of man's nature and to set forth all the data at hand for mere feeling in the matter will not suffice.

The main argument for not considering human nature static is based upon the knowledge that human beings are intelligent. It will be shown that man illustrates the supreme development of intelligence, concerned with relations, dynamic and constantly adapting himself to new forms, and that animal life illustrates the highest development of instinct, as in the hymenoptera, concerned with things, static, using over and over again the old things and getting the old reactions.

From this point of view, then, our contention that human nature is not static resides in a statement of the nature of man and animals with reference to intelligence and instinct.

The scientist is helpful in this connection. His story is thrilling indeed; for when a biologist places upon the stage of the microscope the thin sections which show the development of the cell, he has upon that bit of glass the primary living wonder of the world. But these sections do not tell the entire story, for life goes back to simple origins in part

suggested by the cell, and to complex and wonderful organizations of which the cell is a mere promise. The form of the cell and its morphological changes too often absorb our attention; the essential, and for an appreciation of the argument here, vital characteristic to be observed is that the cell is merely the physical expression of an impulse of life. Evolution has merely deposited the life impulse in a particular form in time and place.

The evolution movement would be a simple one to describe and its direction could be readily determined, if from the single cell to man there were no intervening species. The branching lines leading to forms now non-existent and ending at times in types so different from the final product leave much to be desired. The entire evidence is not available but there are sufficient data to give the broad outlines. We can trace back to the remotest beginnings the origin of animal and vegetable life.

In the beginning no definite characteristic distinguishes the plant from the animal. Attempts to define the two kingdoms come to naught. There is not a single property of vegetable life that is not found in some degree in certain animals and not a single characteristic of the animal that has not its counterpart in certain species of the vegetable world. These two groups may be defined most satisfactorily not by the possession of certain characteristics but by the tendency to emphasize them. Life is a tendency and its manifestation in these groups may be observed as a tendency with greater comprehension of its whole meaning.

It is important to follow the expression of this impulse. In the vegetable cell it early came to an impassé. This cell, surrounded by a membrane of cellulose, was condemned to immobility from the start. From the bottom to the top of the vegetable kingdom there are the same habits growing more and more sedentary, the plant having no need to move, finding around it in its environment all that it needs for life. It remains thus today, a living monument of immobility and torpor.

The life impulse in the animal, going on to the con-

quest of the nervous system, exprest itself in forms that developed mobility. With this came consciousness. The more the nervous system developed the more numerous and precise became the movements that it could start; the clearer became the consciousness that accompanied them. Here was the beginning then of the conscious control and guidance over life that was to mark man as different from the animal; this same conscious control is needed today if man is to meet the problems of his environment in a rational way.

In the animal the life impulse took two definite directions; it emphasized and carried thru two tendencies. The soft organisms needed protection and there arose that group of animals preserving their lives by encasing their bodies in hard shells. In their torpor the crustaceans, the echinoderms live today. Doing so they decreased their mobility and lessened consciousness. Some forms escaped. The ganoids with their protective breast plates gave way to fishes with scales, a less protective covering but allowing greater mobility. The insects freed from the protective breast plates of their ancestors made up the deficiency in heavy covering by an agility that enabled them to readily escape their enemies.

The arthropods and vertebrates gained increasing mobility and consciousness. Their evolution is most illuminating with respect to tendency and nature. Bergson puts the situation so well that his own words are helpful at this time.

> "The evolution of the arthropods reaches its culminating point in the insect, and in particular in the hymenoptera, as that of the vertebrates in man. Now, since instinct is nowhere so developed as in the insect world and in no group of insects so marvelously as in the hymenoptera, it may be said that the whole evolution of the animal kingdom, apart from retrogressions toward vegetable life, has taken place on two divergent paths, one which led to instinct and the other to intelligence."

This then is our argument. Human nature can not be considered static in the light of a life impulse evolving always in man toward intelligence. A corollary of this is true: life with conscious and intelligent control, in short

a rational life, must break away from the instinctive urges, if it is to develop in harmony with the great fundamental laws of man's existence. If we were to acquiesce in thinking of man as instinctive, as a being in whom the main motives and reactions were to be responses to instinct and without conscious and intelligent control then we would accept such statements as, "human nature is human nature." But this can not be! The entire evidence from evolution is that human nature is not static, that instinct is not a stage in man's development and that intelligence, so far as evolution has anything to say, is the goal of man's progress. To quote Bergson again,

> "The cardinal error, which from Aristotle onwards has vitiated most of the philosophies of nature, is to see in vegetative, instinctive and rational life, three successive degrees of the same development of the one and same tendency, whereas they are three divergent directions of an activity that has split up as it grew. The difference between them is not a difference of intensity, nor, more generally, of degree, but of kind."

It is important to emphasize this point. Man's nature if not instinctive can not be considered as static. Those individuals guided by instinctive and animalistic urges do not mar the argument, but rather indicate the need for the appreciation by society and especially by educators of the tendency in human evolution, so that education everywhere may seek more directly for conscious and rational control.

F. Matthias Alexander in that remarkable book, *Man's supreme inheritance*, indicates very clearly the dangers encountered by instinctive guides. In a reply to William Archer he says, "The whole purpose of my book—is to submit that the course of evolution has tended in the direction of our obtaining conscious control of our own bodies, and argues that this is the only means by which we can rise above the artificial restrictions, often physically poisonous, imposed by civilization. And I assure you, sir, that this ideal of conscious control is absolutely unrealizable by any person who is guided and restrained by these subconscious habits of thought, and who is, in consequence, quite unable to exercise the free use of his intelligence."

Here again the essential difference between man and animals demands that we place man's nature in the field of intelligence and, so far as any program of man's culture is concerned, indicates the direction that the social or individual effort is to take.

Because man is to be considered as evolving toward a more rational life in which no instinctive urge will achieve the usual, the traditional and static responses, the whole health problem must be reconsidered and approached from a new point of view. The history of hygiene shows how stupid and awkard we have been. We have thought to deal with personality by tooth-brush drills and medical inspection, by prophylaxis and punishment, when the very source of all hygienic action so far as meeting the crises of life is concerned, was the conscious and motivated intelligence of the individual. The problems of health in the individual can not be met by mere checks on disease alone, or by information on the dangers imminent; indeed, national health presents the same situation. There must come virile motives for attaining a fine end, motives that are rationalized, and conscious. For some time, perhaps always, there will be need for adequate machinery in government to accomplish certain state and regulatory procedures.

The sort of growth we ought to expect in the coming years is a definite, increased control over the instinctive phases of life. All are not awake to the meaning of intelligence in man or the possibilities in human happiness from its dominance. The conscious control that will insure growth, when "all the functions of life are becoming an intelligent harmony," will give expression to broad, human social motives; on the contrary, the instinctive and subconscious guide leads to defeat and a social debacle. We should forever escape from the folly of expecting Providence to prevent disease or control the subconscious self; a rational life aflame with moral purpose is alone effective.

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VI

A GLIMPSE AT CHINA'S MIDDLE SCHOOLS

Having had a first-hand opportunity of observing the work done in three of the most important government middle schools of a great interior city of China, it may be interesting to others engaged in the teaching profession to mention a few of my outstanding impressions. First of all in considering any phase of China's educational problem, one must bear in mind that the nation is passing thru a transition period. The country is in a state of flux. In introducing a Western system of education to an Oriental land one encounters the difficulty of putting "new wine into old bottles." The change thru which China is now passing may be compared with the intellectual awakening which took place in Europe in the Middle Ages.

THE OLD AND THE NEW

In 1905 the transition commenced. It was the beginning of a transition from the old order to a new. A new life was astir in China and in every department of society the change was felt. Perhaps the most remarkable reforms were begun along educational lines. It was in 1905 that Yuan Shi Kai secured a degree abolishing the old system and providing for a new system of education. But it was not until 1912, after the Republic had been established, that the government actually undertook to start the new movement. The following kinds of schools were established thruout the Republic in September, 1912:

(1) Lower Primary School—four years' course.

(2) Higher Primary School—three years' course.

(3) Middle School—four years' course.

(4) Preparatory School or Junior College—three years' course.

(5) College or Professional Schools—three or four years' course.

The jump from the old system to the new was sudden and great. The old education of China was concerned with the classics and some Chinese history. No science, nothing of geography or history or political economy of other nations was taught. The object of the student was to store his memory with characters and to cultivate a good literary style. There were no schools as a Westerner conceives schools. Playgrounds and recreation? The only recreation the student had was to walk in the garden which surrounded his home, for it was in the homes that the classes were held. Usually the boys of one or perhaps of two families met together to write and drone over the characters set before them by the "lao fu tzu" or old scholar. The system was impossible because in the first place the old teacher knew nothing about the rules of pedagogy and in the second place his curriculum consisted of but one or two subjects.

And then came the revolution of 1911 and the overthrow of the Manchus. Enthusiasm for the new education spread like wild fire. Schools were set up wherever buildings could be secured, without regard to the advantages of reaching the people. In Nanchang near East Lake are two schools located within ten rods of each other—one, the First Middle School housed in an exhibition hall and the other, the Ta Tung Middle School located in an old temple. In considering the problem of the new education in China one must not forget the gap between the old and the new systems. It has not been completely bridged because there are thousands of boys, especially among the richer classes, who are still digging away at the classics in their homes.

The advantages of the new education are so apparent that it requires but a cursory examination to show that the schools of today are infinitely superior to the home-study method. In the first place a community spirit is at once developed in the schoolroom and on the playground. Under the old method there was no "lai wang" or intercourse with young people and consequently the boy grew

up with the ideals of his elders. He was denied a natural boyhood. He never learned how to play. His ideals were narrow and he had no opportunity for self-expression. But with the organized school there came a school life and spirit which gave the student new ideas about society. The fellowship, games and entertainments in which he participates today are broadening his outlook and giving him a new view of life.

MIDDLE SCHOOLS PROMOTE DEMOCRACY

The importance of the middle school in the life of the nation can not be overestimated. Students in these schools are from fourteen to twenty years of age—the most plastic period of their lives. It is at this age that they will receive their most valuable ideas in regard to democracy, social control and group action. The fight for the Republic in China is now on. From the students of today must come the political, industrial, commercial, educational and religious leaders of tomorrow. It was inspiring and refreshing to hear one of the students of the Second Middle School addressing the members of the English Club of the Nanchang Y. M. C. A. in these words: "Danger! danger! China is in peril. Do not sleep. Awake!" He sounded an alarm to the youth of China, pointing out that China was like a ship without a rudder and that the only hope of the nation was in her young men. This is but one of the scores of similar testimonials that have come to my attention within the past few months, showing that the spirit of freedom is taking root in the lives of the young men of the country. Dr. John Dewey in his *Democracy and education* says: "A democracy is more than a form of government; it is primarily a mode of associated living." At present China is a Republic in name only, but the spirit of democracy is growing stronger every day.

China is just entering the seventh year of the establishment of the Republic. She is a little uncertain as to the direction of her movements. But does a child walk when he is seven months old? Did the United States develop

into an indissoluble union within seven years after the Revolutionary War? When we consider that it was many years before we abandoned the Articles of Confederation, and that it was not until 1865 that we settled the question of States' Rights, and, further, that it was not until the United States entered the Great War that the country was united as a man, we are forced to the conclusion that China is developing at a rapid rate. The expression "You can't hustle the East" has lost its point. China is moving right along.

The full import of any great movement is always difficult to grasp. It was two hundred and eighty years after the crucifixion of Jesus before Christianity was tolerated in the Roman Empire. In 1520 Luther dramatically denounced the pope's authority but it was not until one hundred and thirty years later that the success of the Protestant Reformation was assured. The first English colony was not planted in the New World until one hundred and fifteen years after Columbus made his immortal voyage.

The hopeful aspect of the educational situation in China is that the government has continued to support the schools. If the government continues to offer a practically free education to all of her children we may reasonably expect that many educated reformers will arise. Education has produced practically all of the great reformers of the human race—Lincoln is an exception. The Republic has already been established long enough to prove two things: first, the country will never again become a monarchy; second, the education in the nation will be democratic in character.

A TYPICAL MIDDLE SCHOOL

The first impression that one receives on examining a middle school is that the school has had a "mushroom growth." One quickly reaches the conclusion that China has not yet struck her gait. She is still in the embryonic stage. The experimental stage has been past but just ahead there is hard work to do before one can speak about fixt policies. With crowded curriculums, overworked

students, untrained teachers and poor administration it is evident that the goal has not been reached. In the First Middle School of Nanchang there are four hundred and fifty students. Five provinces are represented. So keen is the desire of the students for knowledge that they are rarely absent from class. The desks, furniture and equipment are of modern pattern but cheaply and poorly constructed. Even the floors of the building are of the squeaky and rickety kind, due in part to a lack of good lumber in China but largely due to carelessness in construction. Standards are lower in China than in Western countries, and it is yet too early to look for reinforced concrete buildings. Dormitories are maintained in connection with the school, the boys being housed in three different places in the immediate vicinity.

The faculty numbers thirty-six teachers, one of whom is a returned student from America while several are returned students from Japan. The average salary is one dollar per hour tho several instructors receive a fixt rate somewhat in advance of that amount.

The budget for the year is about $12,000 reckoned in Mexican exchange. More than half this amount is appropriated by the Kiangsi Provincial Government, while the remainder is made up in fees paid by the students. The Commissioner of Education for the province is directly in charge of all funds disbursed for school purposes.

The curriculum provides for the following subjects: Mathematics, German, history, geography, English, economics, biology, physics, chemistry, bookkeeping, music, drawing, Chinese, manual training, physical education and morals. Every student has from thirty to forty hours of recitation per week with the result that he has insufficient time for study and practically none for recreation. The physical instruction that he receives consists of a set of monotonous calisthenics or the performance of some ragged military drills. The manual training department certainly does not remind one of a munitions factory but the fact that students do actually saw boards and drive nails is

taking a long step toward a much-needed type of instruction in the schools today.

China has always had a scholar class. The old type scholar with his long finger nails, bird cage and tortoise shell spectacles, was a well known figure a few years ago. But the new student class which has suddenly sprung into importance and power is composed of entirely different kinds of individuals. The new type is arrogant and untried. These new students feel the importance of their position and take liberties which amount to nothing less than license.

PRESENT NEEDS

Volumes have been written on the needs of China but perhaps a few more words on a subject pertaining to the needs of a particular group of her young men will not be amiss. A short time ago one of the leading students of Hsin Yuan Middle School made this statement: "I think Western science is better than Chinese science but Chinese philosophy is better than Western philosophy. The philosophers of Greece and Rome did not save their countries. China has had many struggles but she has never fallen. Her philosophy has saved her." In one regard this student was right. The first great hope for China is the introduction of Western science—not mere book knowledge or theoretical science, but applied science. She must be shown how to make machines, build railroads, open mines, farm scientifically, care for her sick scientifically and withall she must be taught the principles of efficiency. The utter lack of system and the careless half-hearted methods of work in China are painfully apparent to every Westerner who sets foot upon the land.

Industrial education must be taught in the schools—industrial education that will teach a boy or a girl how to make a living. Agricultural, industrial, business, commercial and domestic science courses should figure prominently in the curriculums of all schools. Training for citizenship is essential. Heretofore the one outlet for a man's ability has been political life. There must be several

channels thru which one can express himself and serve his country if education is to play a large part in the life of the nation.

The second hope for the Republic of the Far East is Christian education. Many Chinese, like my student friend, do not realize the failure of Confucian ethics to save China. China has not been saved by her philosophy. First of all she is her own worst enemy. For centuries she has had a set of moral guide posts that have failed to guide. Mr. Yung Tao, an eminent merchant philanthropist of Peking, is authority for the statement that the three greatest evils in China today are gambling, concubinage and immoral sex life. Unless these evils are combated in the lives of the youth of the land there is little hope for the nation of tomorrow. Moral education that has as its goal the making of a life is to be desired above all else, in the schools of China today.

The kind of Christian education that will count above everything else, is the kind that will build upon the foundations that are already here. The ethical teachings of Confucius along with the teachings of the Old Testament should be regarded as preparation for a religion of life and vitality and power. It is in the New Testament teachings that men receive the power by which they may realize their ideals.

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VII

AMERICAN SOLDIERS IN FRENCH UNIVERSITIES

The American Army, during the difficult period which followed the armistice, tried an interesting educational experiment. The soldier was sent to school. It is the purpose of this article to discuss the part of the plan which concerned those men of college grade who were sent to French universities. While about six thousand went to Beaune, where an American Junior College was established, approximately the same number was sent to the regular universities. These men were carefully chosen and represented some of the best men in the entire A. E. F. They ranged from mature graduate students, some having the doctor's degree, and a certain number ranking as high as colonel, to younger college students, officers and privates. The largest detachment, nearly two thousand, was in Paris, but all the universities, except Lille, Algers and Strasbourg, had their contingents. The English universities were able to receive rather less than Paris alone, but those included in this allotment were reported to have done profitable work. It is a matter of interest to inquire the real educational value of this experiment. The men remained four months, from March first to July first. It was my fortune to be concerned in the planning of the work, to act as "American Dean of Paris," and to inspect what was done in nine of the most important universities. I gathered reports as completely as possible, was in close touch particularly with the situation in Paris, and shall try to sum up the results.

The students came from every walk of life and had every conceivable interest. A small minority was anxious mainly to escape from the daily grind of army life. They wanted to have more freedom and to amuse themselves. Probably

this minority was smaller than the same type seen in every American university. The war sobered young men and those who presented themselves for study gave every appearance of seriousness, as evidenced by their attitude and their actual work. The opinion has been exprest that with the bar of a foreign language and with the handicap of an improvised course, the stay of our students was only four pleasant months spent in a college atmosphere without genuine academic profit. Such a view is erroneous. While men studied under certain obvious difficulties such as ignorance of French and the necessity of entering a totally different academic atmosphere from what they were accustomed to, the results were a magnificent justification of the generous opportunity offered by the army and placed under the direction of Dr. John Erskine, of Columbia University. It is extremely difficult to sum up what it all finally meant, because so much of what was attained was educational indeed, but extra-mural and because the work of the different universities was necessarily of varying value. Discipline was everywhere practically perfect and there was a minimum of disorderly conduct and living, especially in the quiet provinces. A great deal more profit was naturally gained in a place like Bordeaux where Professor Armstrong, of Princeton, with his knowledge of both French and American conditions, was able to place the men where they belonged, look after them and stimulate their attention in ways familiar to us, and smaller institutions where there was in charge only an officer unfamiliar with education and where the students merely followed lectures in the regular course and took extra French classes. Again the stimulus of the celebrated professors of Paris was a marked influence on our students. There were individuals who profited enormously. An American doctor in Toulouse, for example, with the laboratories and assistants of the university to aid him, and a vast amount of hospital material at his disposal, developed a method of closing wounds which had in some cases remained open for over a year. On the other hand, there were many doctors in Paris who

had hoped to obtain highly specialized graduate work in their particular lines and who were totally disappointed.

The American, whatever his education—and unfortunately from the French standpoint our education is indefinite and rather slipshod—is behind no race in energy, resourcefulness and adaptability. He showed these qualities in this situation. The students were intensely interested in the life which they found around them. Quite different from the average "doughboy," enclosed in the rigid army system, the men made their rare chance worth while. They took the opportunity of three-day leaves and traveled all over France in an eager spirit of intelligent curiosity. They developed athletic, journalistic, theatrical and social life in their detachments and in the towns where they were. They raised large sums of money for good causes to show their gratitude to the French. A scholarship of a thousand dollars for one year was given to a French student in each university to be used for study in America. At Toulouse, law students carefully edited their notes and published them in French and English for the use of the whole class. The men entered into the life of the communities in which they found themselves in the most intelligent way. Nowhere were there difficulties with the population or the authorities. Innumerable friendships and many marriages were contracted. In Paris large numbers made application to stay overtime to finish special courses. Elsewhere many wished to remain for summer work. Nine out of ten testified to the students' committee that they considered their study a success.

With all this evidence, which could be largely extended, that the men were actively interested, it is still necessary to consider specifically the educational value of the army plan. In the first place the student body gained a practical and literary knowledge of French. Immersed as they were in the French atmosphere, living as most of the students did in good French homes, listening to three or even four sixty-minute lectures a day, they could scarcely escape learning the language. Everything about them spoke of

French history, art, politics. At the end, the majority could follow intelligently a lecture in French and carry on with more or less fluency a conversation. Many made phenomenal progress. One professor remarked to me that nearly every student in his university was regularly taking notes on the lectures in the month of May. In America we can scarcely hope to teach as much French in several years of class work as was easily acquired in four months by the soldier-students. In making this judgment I am guided not merely by such evidence as I have cited above. I judge from many visits to classes, from a class which I gave myself at the Sorbonne and above all from a mass of written reports made by the monitors of all the classes at the Alliance Française, comprising nearly a thousand students.

Apart from the question of pure language, there was much lost of the first days and even weeks of instruction. Nevertheless, much was done to forestall the difficulty. Interpreters were used in many classes. Much work was given, especially in Paris, in the English language. Professor Fernbach, of the Pasteur Institute, for instance, gave a well-appreciated course in biological chemistry (really a course in ferments) to a large class, using English entirely himself. Summaries were printed for all the nine special courses in the Faculty of Letters in Paris. In all the faculties there, the special courses met twice a week for lectures which were supplemented by a third hour in English for discussion of what had been already treated. In the provinces where fewer students could understand the language at the start, a month was given largely to a concentrated course in French for all who needed it. In Paris over half of the students carried a course in French, usually in conjunction with other work.

The series of special courses offered by the Sorbonne under the title French Civilization, and largely duplicated by the other universities, proved to be of the highest interest. It is worth noting that the Sorbonne has just announced that this unique series will be continued as a regular part

of the curriculum, altho intended above all for foreigners. These courses were as follows: History of the French Language, Brunot; History of France, Guignebert; Old French Literature, Chamard; Classical French Literature, Reynier; Modern French Literature, Michaut; Geography of France, Herbette; Modern Ideas, Bouglé; Modern European Politics, Denys; History of French Art, Lemonnier. The summaries of these courses, varying from thirty to sixty pages weekly, were in the hands of all the students. Examinations, given in April and June, as well as résumés, called for three times during the term, showed that the instruction was intelligently followed. Reading was done in the Sorbonne Library, where there was an average attendance of forty students daily and six hundred and forty books were taken out during May and June. Naturally not nearly so much outside study was done as in American institutions where daily assignments are made and reading supervised with care. Besides taking such work the men spread thru the entire university and its allied schools and could be seen attending lectures in every imaginable subject.

Courses in science corresponded to those in letters. Laboratory work supplemented the lectures. When students could work under such instructors as Professor Fernbach, Professor Caullery and Madame Curie, not to mention others, their interests were well served. The students in science and engineering occasionally objected to the stress laid by the French on the theoretical side of the subjects. It is worth noting, however, that in a special advanced course in wireless telegraphy given to a group of chosen men from the signal corps, few of the Americans were quite up to the standard of the course, owing to their weakness in advanced physics and mathematics. Indeed, it is doubtful whether any were able to grasp all that the course involved.

The law course in Paris was of particular interest. It was taken by a hundred and eighty-nine mature men, most of them practising lawyers in civil life. Thirty of

them altogether took thirty regular courses in addition to those arranged for Americans. Two men past the examinations for two complete years of French law. One article was written for the French law review. The law faculties in France are everywhere strong and in all the universities the Americans were imprest by the character of their instruction. In Paris the men were captivated, especially by Professors May, Berthélemy and Geouffre de Lapradelle, the latter advisor of the French government and formerly exchange professor at Columbia. In one course living questions were brought directly from the Peace Conference into the classroom. A monitor told me that the work of one of these instructors was so remarkable that it was the saying of the class that they would take work with that man in any subject and any language. The men stayed as a body to the end, past the examinations exceedingly well and were practically never absent, even when Métro strikes obliged many of them to walk three and four miles to class. What was remarked by the students was the integrity, the eager interest and the high intellectual quality of their professors. As the head monitor wrote, "Each one of us will return to the United States in a better condition to resume his work, a better citizen on account of broader vision, a better friend of France and the French people."

About two hundred men were enrolled in different businesses and social science schools of university ranking. The work was sometimes inappropriate to American needs, but all of it was suggestive and some of the courses were of high grade and even unobtainable elsewhere. One older man wrote of a certain course that if what was said there could have been appreciated in America, the egregious mistakes which he had himself seen American business men make in the Orient would have been avoided. At the *École des Hautes Etudes Sociales*, Professor Nogaro of Caen gave a course in Money and Exchange which is regarded by the authorities of the school itself as presenting a new and original view of this important subject.

Nearly fifty engineers were distributed in the *École*

Polytechnique, the *École des Mines* and the *École des Travaux Publics*. The criticism was sometimes made that the work was too theoretical, but most of it interested the men professionally to such an extent that they stayed to the end, finished their "projects" and applied almost in a body to remain after July first to finish. In some subjects the French who are beyond any doubt superior builders, have engineering work to show which can not be duplicated in America. The students were quick to seize upon such chances.

Music and art, as was to be expected, attracted many advanced students who profited by the unrivalled opportunities which the city of Paris offers along such lines.

An exception to the general satisfaction exprest by Americans is found in the medical work. There were nearly a hundred and fifty doctors in Paris. They were older than the rest, mature men, a large number colonels and majors who were already specialists. Most of them were weak in French. They came for strictly post-graduate work. Paris is at present poorly organized for such a purpose. The graduates are not separated from the younger students in the clinics and coordination between the different clinics is wanting. This condition is recognized by the French and plans are on foot for a reorganization of medical instruction. As a whole, the Americans were dissatisfied with the work in medicine.

In comparing the instruction in Paris and elsewhere it is clear that some of the universities were not equipt at all to handle the advanced students in all the lines of study desired. Laboratories were often small and poor Subjects were often demanded in which the instruction was either poor or altogether lacking. On the other hand there are found outside of the capital many young, ambitious men who are to be the professors of tomorrow in the university of Paris. At the same time one finds inevitably in Paris a good many professors of yesterday who have made a reputation in past years and whose work is no longer valuable today. The atmosphere of quiet study of a provincial university makes it an ideal place for all

but the very advanced student. It is easier to get into close touch with the real French people and the professors are able to give more individual time and interest to their students than the well-known and intensely occupied professors of Paris.

It was clear to me as I studied the reactions of our students that their interest and enthusiasm were the natural results of certain inherent French qualities displayed at their best in the university instructor. The French professor is a genuine intellectual. He presents his subject with a seriousness and integrity necessarily impressive. He is not only a master of his subject, but also a master of the art of lecturing. Each lecture is a finished piece which stands out in the mind as a whole which can be remembered almost without an effort. There is no slipshod instruction permitted, no presentation of a mass of confused and uncoordinated facts. The exposition of a different point of view from our own in this clear-cut manner stimulated our students. They felt the broadening effect of such work and returned to America better educated men.

Before the war the French universities were rather inhospitable to Americans. Students found themselves in difficulties of red tape. It was hard to find and register for the work which they wanted. The professors did not understand them or the system of which they were the product. Today the American is known and liked. The French are anxious to furnish him with good university work and are well equipt to do so. The new course in French Civilization given in Paris by a group of the best professors is an excellent example. The administrations are ready to go half way to meet Americans and know how to help them to take advantage of what is found in each university. With their sense of order and precision, their love of clearness, their instinct for all that is artistic, their high intellectual gifts, added to their present understanding of Americans, the French professors have something to give to the future American student in France.

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VIII

AMERICANIZATION THRU BIOLOGY

America, the land of promise and opportunity, is also the land of work. From the memorable day of the landing of the Pilgrim Fathers down to the present time we have been notably a country of workers. The tremendous obstacles that have had to be overcome from the clearings made in the New England wilderness to the harnessing of our gigantic waterfalls to furnish the modern means of industry—electricity—have meant an unending stream of steady workers.

The brawn of muscle, the clearness of brain and the virility of this our youthful nation is a logical result, biologically, of the activity of the years of its existence. We know from a study of biology that every living cell the world over, plant and animal, is working all the time. When it ceases to work it ceases to be. The salient characteristic of living protoplasm is its functioning or the carrying on of its work. As a muscle works it grows; compare the arm of a blacksmith with that of a clerk; as a brain works it grows. America has owed its progress to the work of its settlers and their descendents and the hundreds of immigrants that have come in a steady stream to its shores. Physiologically there is no such arbitrary division as work for one-third of the time and rest for the other two-thirds.

These settlers first attempted to lead a more or less isolated existence in Massachusetts, Maryland, New York or some other state. The attempt proved successful for a while but the time came when cooperation and consolidation were absolutely necessary. From the union of the thirteen colonies to the present day we have repeatedly realized the fallacy of any state or groups of states or of individuals attempting to stand alone and exist. Their

experiment would have resulted in decadence for themselves and a source of corruption to the nation. Tumor cells in plants or animals are abnormal cells that are leading an isolated abnormal existence. They may grow prolifically but they interfere with the normal growth of the adjacent cells and may so affect the functioning of the whole organism that death finally occurs. Let us illustrate with cancer. The only hope of saving the life of the body in which these cells are growing, is to remove them in the very beginning of their existence. America has guarded most carefully against any tumorous growths—figuratively speaking—that have appeared in her history. She has gone to no end of trouble and expense to facilitate a close cooperation and constant intercourse between her various parts.

Biology teaches us that a one-celled animal, the paramecium or slipper animalcule for example, is self-sufficient to a certain extent but there is a limit to this self-sufficiency. This one-celled microscopic animal can perform all the functions of a many-celled higher animal; it can move, get its food, digest it, assimilate it, eliminate its waste, breathe, grow and reproduce. In its simple method of reproduction, that of fission, whereby the mother paramecium simply splits in half horizontally and divides into two daughter paramecia again, it is self-sufficient; the asexual method of reproducing can go on for many generations. Careful observations, however, have shown that such isolation will lead to decay eventually. After about the two hundred and fiftieth generation of paramecia—which is reached in less than a year for a paramecium may divide as often as once a day under favorable conditions, the animals can no longer reproduce sexually; they have reached the limit of their self-sufficiency. But even paramecia know better than to attempt to live in an isolated state. It is only under the abnormal conditions of the laboratory where they are experimented upon, that they get even a chance to live this life of exile cut off from their fellow beings. In their normal surroundings they live in swarms; they touch one another on every side. Simple reproduction

by fission occurs, but every so often there is interspersed the method of conjugation. By this method the nuclear material of two paramecia is interchanged to a certain extent and the two conjugants, after separating, go on each in its own way. They have gained in virility in their intercourse.

For many years much was written and said for the struggle for existence but it remained for later-day men of science to allude to the importance of mutual aid. We watch the bee or other insect gathering its nectar from the sweet-scented or beautifully colored flower but perhaps fail to realize that this bee on its part is rendering a most important service to this flower in cross-pollinating it.

Among animals there are numerous examples of this mutual aid. Beavers live in villages. When they wish to build their nests or houses they all help to dam the stream, thus forming a broad marsh or pool. In migration birds follow leaders who seem to discover the way for them. In all these instances there is evident also an attempt at division of labor and a definite organization. This organization and division of labor reaches a climax among the insects especially in the case of the bee and the ants. Here we have at least three distinct types of animals each with its own work to do; the males and females concerned with increasing the colony and the workers who do all the work of building and caring for the home and young ones, of collecting food and storing it, and of protecting the hives. Each kind of work is better done as a result of this division. Each goes about his work without interfering with the other. A highly specialized social life demands organization. Man exhibits the highest form of social development in the animal kingdom. Just as among the other animals we find some leaders and other followers, some directors and some workers, so in human society there must be different types of work; each of tremendous importance, but all necessary for the good of the whole. Biologically there can be no anarchy. There must be a centralized seat of power—the leader of the flock, the brain

of the individual. The independence of the individual may be sacrificed but his social group can accomplish greater ends thru the mutual aid of its members. In fact the highly complex life of the very individual would be utterly impossible without the aid of his coworkers.

In the development of the biological world from simple forms of life to the highly complex ones there is abundant evidence to show that this development has been along the lines of a gradual evolution. There has been no revolution in the biological world; no cataclysm. Nature has gone on in an even, orderly fashion. The development of the political, social and industrial forces of our country have likewise been along the lines of evolution, not revolution. By such means only, can there be true progress.

Finally, if biology can get a chance to present for study the physical material of our nation, its wonderful resources, animal and mineral, the words of our national anthem will have a fuller meaning for our native or naturalized citizen:

> "My country, 'tis of thee—I sing
> I love thy rocks and rills,
> Thy woods and templed hills."

How can he truly love what he does not really know?

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IX

REVIEWS

The doctrines of the great educators—By ROBERT R. RUSK, University of Edinburgh. Macmillan and Company, London, 1918. 294 p. $2.00.

This publication of Dr. Rusk is an interpretive exposition of the fundamental educational principles gathered from the writings of twelve great educators prominent in history thru their educational classics. To each educator is given a chapter. Thus the book contains twelve chapters as follows: Chapters—1. Plato; 2. Quintilian; 3. Elyot; 4. Loyola; 5. Comenius; 6. Milton; 7. Locke; 8. Rousseau; 9. Pestalozzi; 10. Herbart; 11. Froebel; 12. Montessori. With the exception of the great quintet including Plato, Quintilian, Rousseau, Pestalozzi, and Froebel, others might have selected differently; however, to the student of the history of education all these names are quite familiar.

Not every teacher is capable of reading an educational classic with profit, but the true teacher is always hungry for the best and is delighted to read and reread the classics which have shaped the thought and practises in human progress. Personally, I should rather read the classic itself and make my own interpretation, and for the majority of teachers I think that is the better plan. No teacher's library can be considered complete that does not contain a copy of Plato's *Republic and laws;* Quintilian's *Institutes;* Rousseau's *Émile;* Pestalozzi's *Leonard and Gertrude,* and *How Gertrude teaches her children;* Froebel's *Education of man,* and *Pedagogics of the kindergarten,* as well as the many other excellent classics suggested in the publication of Dr. Rusk. But all teachers would be strengthened by a study of *The doctrines of the great educators* and many will find it the most desirable means of approach to a study of the educational classics.

It is a difficult task to simplify, reduce, or add to the clearness of an educational classic. To become such the work must be epoch-making, clear, concise, inspiring, and within the easy comprehension of the people; otherwise it will not live and become a classic. Hence when Dr. Rusk tries to condense in a few pages the essential thoughts and principles which required a Plato or a Rousseau many pages in order to make clear, he has undertaken a task to be successfully handled only by the expert or skilled artist. He has, however, selected quite wisely his material, organized it into an interesting and readable book, held close to the spirit of the texts, gave a fairly clear analysis of the essential pedagogical principles, and in parts even added to the clearness of the original. Many would have appreciated the publication more had the author held closer to the language of the texts of the great educators and less to that of his own. The book will find a welcome place in college and normal school departments of education in courses on educational ideals and principles and educational classics. It will also be of aid to teachers desirous of becoming better acquainted with the fundamental principles upon which true education is based.

G. W. A. Luckey

Lincoln, Nebraska

Science and learning in France—With a survey of opportunities for American students in French universities. An appreciation by American scholars. The Society for American Fellowships in French Universities. 1917.

The title page of this impressive book describes the purpose of its contents, which is to present concretely to the American student the past accomplishments of French scholars in the various fields of science and learning, and to point out the opportunities for study and research that are offered in the several universities of France. The special articles descriptive of the accomplishments of French scholars under each subject have been written by American scholars, which for this particular purpose adds

greatly to their value as an opinion from the side of those who are immediately concerned and for whom the information is intended. The book also contains inspiring introductory articles on The Mind of France, by President Eliot, and The Intellectual Inspiration of Paris, by George Ellery Hale; a most valuable statement with considerable detail by Professor Geddes, of Boston University, of the educational advantages for American students in France, together with a history of the recent changes in the university system; an extended article by Professor Vibbert, of the University of Michigan, on the French institutions of higher learning, their organization, degrees, requirements and fees, and a further one by the same author containing practical suggestions to the intending graduate student. The whole is, accordingly, a handbook, more complete and of much greater importance than anything hitherto available, for an understanding of the actual conditions of the higher education in France at the present time and their significance to the graduate students of American universities and colleges who are impelled, by reason of specialized work and the facilities offered by other than American institutions, to study abroad.

There can be, of course, no need of a brief for French scholarship. The pages of the present volume that treat in alphabetical order the various special subjects from anthropology to zoology, are alive with names with which everyone is familiar, from the pioneer scientific beginnings of the subject in question, where such names are astonishingly frequent, thru their whole historical development to the present day. The names, too, of the present workers in well-nigh all fields of science and learning with which the book is directly concerned are fundamental facts in the present status of the subjects under discussion, without whose citation they would be unintelligible in their progressive growth.

All of this abundantly justifies, if again such justification is necessary, the turning of the serious attention of our graduate students, to a far greater extent than has ever

been the case in the past, to France as a place for special study and research. There are, however, other reasons convincingly presented in the book that make the use of the resources held out by the French universities desirable for the American student to avail himself of much more frequently and liberally than he has ever done before.

That our students have neglected France as a place for graduate study and have chosen instead German universities, has reasons that are not always perfectly understood. The German universities down to recent years, when on account of the increasing numbers of foreign students it has been found necessary in many cases to limit their attendance and to scrutinize more closely their claims to matriculation, have always been most hospitable to the American student. The lectures, laboratories and seminars at all German universities have been wide open to him, often upon extremely meager academic credentials, and no obstacles, except the reasonable ones of attendance and fees, have been placed in his way as a candidate for a degree, which regularly and usually has been the doctor's degree and most frequently that of Doctor of Philosophy. The well-defined educational system of the German universities commended itself, too, to the American student. As a method of procedure from immatriculation to promotion, as the German phraseology has it, it was logical and readily intelligible. The student who had earned his baccalaureate degree from one of the better American colleges was fairly qualified to enter upon the course of study, which it was easy to arrange for his progress thru the six semester sequence that normally led up to the writing of a dissertation and the final examination for the degree.

Another important reason why American students continued to flock to Germany was the vogue that had gradually arisen for such a practise. The attendance of Americans at the German universities began early in the preceding century. Edward Everett, Professor Geddes reminds us, was the first American to take the degree of Doctor of Philosophy, at Göttingen, in 1817. At this time, and for more

than half a century afterward, it was necessary for the student of a specialized subject in very many instances to study abroad because of the lack of opportunity at home, and the German universities acquired a continually increasing prestige, both on account of the facilities offered for study and for the degree which it was readily possible to obtain for the reasonable completion of a not impossible requirement. When the writer of the present review went to Germany in 1878, it was not possible to study the subject of his choice to any ultimate extent in any university of the United States. It is not for a moment assumed that he actually learned his subject to an ultimate extent, but the opportunity was undoubtedly there, and not here, to do so. This necessity for studying abroad, which was once a real one, with the growth of graduate instruction in America has, of course, disappeared, and there is at this time no subject of study and research that it is not possible to pursue in an American university as advantageously and thoroly as at a German university, and the facilities for such special work are often even better in our own institutions than in theirs. Graduate study in Germany, which for the reasons stated began as a necessity, in its later aspects became more or less a fad, with the fetish of the Ph.D. degree, which had received a growing but largely an unwarranted significance in America, as its crowning reward inevitably behind it. The German universities reached their highest level of distinction in the seventies and eighties of the last century. Some of them, like Berlin, Munich and Leipzig, have grown since then inordinately in size, but the great names of the university teachers of that period have never since been matched, and it is quite safe to say in the light of the lasting effect of present conditions, will never be matched again. The great material interests that have revolutionized German life have drawn men away from university careers for greater emoluments and greater personal prestige. The old Germany in this respect, as elsewhere in every aspect of life, is only a memory that with the passing of the present generations will disappear forever.

The present volume admirably presents the case of the French universities. Down to the reorganization of education in 1896 they were not attractive to foreign students, who, in order to secure recognition as candidates for a diploma or a degree, were obliged to undergo the same training prescribed for French students. The educational act of July, 1896, authorizes the universities to award new degrees known as "University degrees," and in accordance with it they have created doctorates which are now liberally open to holders of acceptable bachelor's degrees from American colleges. These new degrees do not, however, in any way supplant the degrees conferred by the state, which are required as before of aspirants for public service in France. The university doctoral degrees in Law, Science and Letters are now bestowed by all of the fifteen universities of France with slightly different requirements, but under the same general conditions of acceptance to candidacy. Degrees in medicine, pharmacy and dentistry are still under state control alone, and no American substitute for the preliminary degree is accepted without special action by the Minister of Public Instruction. Neither the book itself nor this review of it means to make out a case for the degree as the paramount consideration for study at a French university. The admission of the foreign student into academic citizenship is, however, the important fact connoted by it, and that is now assured in all of the French universities on as liberal a basis as it is possible to bestow it.

The question naturally arises as, after all, the fundamental one, whether the French universities offer in any full measure the opportunity for study and research that the American graduate student should reasonably demand if he is to go abroad for the pursuit of a specialized subject. The present volume makes it unmistakably appear that there are abundant opportunities in every such subject for work of the very best kind. The choice of a university in France is, as it always has been in Germany, a choice of men and only secondarily of place, and, in settling upon the proper place to study, it will be the peculiar facilities for

work in the particular subject in hand that will turn the balance as to whether the Sorbonne or one of the provincial universities is the one to be desired.

There is no question under the present conditions of the reorganized system of the higher education in France of the breadth and reality of such opportunities or of the hospitable attitude of the entire body of French universities toward the American student who desires to use them. And now that the glamor has past and we have learned in their effect the crass lessons taught by German Kultur, the French universities as places of graduate study will more and more come into their own as places of scholarly inspiration and of a real civilization that is not at the bottom an assumption and a gloss. We have been led to believe by Germany, as the Great Advertiser, of the supreme dominance of German science and learning. There is, of course, no reason to deny her just claims, and she has exercised in many ways an undoubted influence of value upon American scholarship. She has taught us preeminently the important lesson that we needed to learn of the painstaking exactitude of method that is characteristically hers, but our ready belief in her wide superiority has led us astray to underestimate the valid claims of other nations as efficient workers in fields where she has often been made to seem to stand alone. In looking back upon it, it is easy to remember that some of the instruction in the German universities was undoubtedly brilliant, but all of it was by no manner of means either in scholarship or teaching the superlatively best. It was not always inspiriting or inspiring. As an object lesson in persistence it was admirable, but some of it was unutterably weary and long drawn out. It was phenomenally industrious in the collection of material, but singularly deficient in mental alertness and too often devoid of inherent originality and constructiveness. In all of this it was wholly and characteristically German. The German mind is not an alert mind, and we have nothing to lose, but much to gain in exchanging for the plodding industry of German scholars the eager-

ness and alertness of the scholarship of France, with the clarity of statement that is characteristic of the French language as its mouthpiece. And another aspect of the matter that can not be too strongly emphasized in directing the attention of our students to France is the inherent sympathy that exists, and has existed from the early days of this Republic, between France and the United States. As has elsewhere been pointed out in connection with this movement, France, both politically and socially, is like ourselves a democracy, and the aims and the spirit of her universities and her scholars and the inspiration of her learning will be in close accord with our own.

In the printed circular letter that was sent out with the book attention is called to the fact that it is in no sense a pro-ally document, and that it was a mere accident of time that before it was completed this country had entered the war and had become an ally of France. The book has accomplished its real purpose of calling a dignified and convincing attention to the educational resources of France from the point of view of their recognition and use by American graduate students, and it has done this admirably and convincingly.

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X

NOTES AND NEWS

Promotion of teachers from merit lists

A plan for the promotion of teachers from merit lists is the subject of Bulletin XIV of the Department of Educational Investigation and Measurement of the Boston Public Schools. The rules of the School Committee of Boston, it appears from the pamphlet, provide that the superintendent "Shall, subject to the approval of the board, appoint, reappoint and remove all members of the supervising staff and teachers; provided that in the original appointment of subordinate teachers he shall consult the principal of the school or district, the assistant superintendent in charge thereof, or the director of a special department if the appointment is in that department." The necessity of some plan for promotion to positions of higher rank on the basis of merit, it is asserted, has arisen on account of the size of the public school system and the variety of ranks of teachers both in the elementary and the high schools. Because of the large numbers of teachers, too, who hold certificates from the Board of Superintendents making them eligible for promotion, it has become necessary to devise some plan for determining their relative professional worth.

The plan of promotion proposed involves making an accurate estimate of the work of candidates in their present positions, together with a consideration of the probability of success of such candidates in the positions which they seek. These ratings are to be secured from the assistant superintendents, whose functions are supervisory, and who may be presumed to be competent to judge the relative worth of candidates; and from masters who come into closest contact with the work of candidates. When such a plan is in complete operation, it is concluded, Boston will have applied civil service principles not only to the initial

appointment of teachers to service, but also to their advancement within the service after appointment. This discussion of the matter, we are informed, should not, however, be viewed as final, but rather as a report of progress.

British educational mission

The report of the visit of the British Educational Mission to the United States, October to December, 1918, and a supplementary report on Women's University Education by Miss Caroline F. E. Spurgeon, after the lamented death of Miss Sidgwick, the only woman member of the Mission, is an interesting account of American educational conditions in the colleges and universities as they were observed in a two months' tour of the country, during which the Mission, according to the report, traversed 28 states, traveled about 8000 miles, and visited more than 45 educational institutions. The Mission, which, it will be remembered, came to the United States at the invitation of the American Council on Education, and under the especial auspices of its Committee on International Educational Relations, consisted at the outset of seven members who represented widely the institutions of higher education of Great Britain. The tour of the Mission was really a voyage of discovery. Its *raison d'être*, as is gleaned with some difficulty from the report, was the assumption that there will be in the immediate future a considerable flow of students and teachers across the Atlantic in both directions and that ways should be devised intelligently to promote it.

The report contains a survey of the journey of the Mission, in which each institution visited is succintly described. Under the head of some general impressions received, the magnitude and importance of the universities and colleges is noted. The Mission, it is stated, was imprest by the size and character of the buildings of all the universities visited, by their remarkably complete equipment in libraries and laboratories, and by the size of the teaching staff. It was also imprest, to use the word several

times repeated, by the wide-spread interest in education permeating all classes of the community. "All these conditions," it is summarized, "make us feel very strongly that there is in America as much to attract the British student as can be offered by British universities to the American student."

The report suggests various ways of promoting the objects of the Mission, among them, that an American mission, similar to this, should be invited to visit Great Britain; that the interchange of students and teachers should be actively promoted; that traveling scholarships without delay should be provided; that a year-book of the British and American universities should be printed; and that summer courses for American students should be instituted in British universities as well advertised as are those of France. Lectureships on American history and institutions, it is also asserted, should be established in the universities of Great Britain.

The report gives in a few interesting paragraphs on administration, conditions of admission, and the college, some differences between American and British universities that it is well to have understood. The principal recommendation made by the Commission, and so stated, is that provision be made as soon as possible for the systematic interchange of students and teachers; and the opinion is exprest that in such an interchange, especially of the younger men and women, is to be found the most powerful aid toward a closer relationship and a better understanding between the two countries intimately concerned in such a result.

The supplementary report on women's university education by Miss Spurgeon is an exceedingly good characterization, and perhaps the very best within a short compass, of the conditions at hand in this particular phase of education in the United States. As in the main report of the Mission, the sense of amplitude of space in buildings and grounds is also noted specifically of the women's colleges. There is, the report states, furthermore, a sense of physical well-

being and of every encouragement for it, a fact, the writer asserts, that very markedly differentiates American colleges and universities from those in England. The interchange recommended in the main report as an international matter is also warmly supported, but the writer sees certain other advantages that it is interesting to note. "As regards women," she says, "in addition to the advantages of an international kind already pointed out, we in England will be helped towards a higher standard of women's academic needs, we can study the results of a freer system of coeducation and social intercourse than we have as yet achieved, and we can gain much general inspiration by sending over our students and teachers to see for themselves the provision and the opportunities which America offers to women." The report as a whole is well worthy of attention, both as an interesting view from the outside of conditions of the higher education among us that have been appreciatively apprehended, and as an enthusiastic plea from what has sometimes been considered a conservative source for a better educational understanding between the two English speaking nations.

The junior college in education

The University of Missouri has issued as a Bulletin (Education Series 12) a Circular of Information to Accredited Junior Colleges which is interesting as a formal statement of the recognized place of the junior college in the scheme of education, and the conditions of a proper articulation with the high school below and the college or professional school above it. Until the last few years, to follow the report, no provision was made to include in the organization of a correlated system those colleges that give only a part of the standard course of college work. These colleges, however, if properly organized, as many of them are, to give such a part, in the interest of popular education should unquestionably become articulated with the educational system. The movement to require a two years' college course as a preparation for the work of the professional schools, which in turn has

made a division in the normal four years' course of the college, marks, furthermore, a definite function for colleges which do not offer four years of college work. They can in this way logically give the academic preparation necessary for entrance to the professional school on the one hand, or, on the other, to the last two years of the college of arts and sciences.

The present report states in detail the conditions of accepted affiliation with the University of Missouri. In accordance with this arrangement, in order to be duly accredited, the requirements for admission to the work of the junior college must be equivalent to those of the College of Arts and Sciences in the University. If the institution maintains a preparatory school in connection with its college work, it must be approved by the university. The course of study must be two years in length, and the college year thirty-six weeks. For graduation, the student must complete sixty hours of work, which must be the equivalent of that required in the first two years in the College of Arts and Sciences in the University. The requirements also provide for an adequate and properly prepared teaching force, and for proper laboratory and library equipment.

An ardent dogmatist

It is not often that one picks up a book in the early pages of which the author is quite certain of so many things that are not so, as is the case of the volume entitled *The new state* by M. P. Follett, recently published in this country. The book is marked by an imperative and emotional dogmatism of the sort which all too frequently accompanies contemporary expressions of superficial thinking and writing on public problems.

From a few of the early pages of this book we cull these emphatic and unsupported statements:

"Group organization is to be the new method in politics, the basis of our future industrial system, the foundation of international order." (p. 3.)

"We have not even a conception of what democracy means." (p. 3.)

"The individual we do not yet know, for we have no methods to release the powers of the individual." (p. 3.)

"Representative government, party organization, majority rule, with all their excrescences, are dead wood." (p. 4.)

"Representative government has failed." (p. 5.)

On page 7 the author asks plaintively whether the dogmas advanced seem "mystical." The answer is that they are not so much mystical as foolish.

New president of the University of California

In succession to Benjamin Ide Wheeler, who retired from the presidency of the University of California in June last, the regents have now chosen David P. Barrows, Professor of Political Science and Dean of Faculties in the University of California. The new President was born at Chicago, Illinois, and is in his 47th year. He received his formal education at Pomona College, California, at the University of California, at Columbia University and at the University of Chicago. He spent nearly ten years in the Philippine Islands in the educational service of the government, and on his return to the United States entered the service of the University of California.

The *Argonaut* describes President Barrows as "in the best sense a man of the world, imbued with ideas and conceptions founded on a wide knowledge of men and things." The *Argonaut*, which always voices the best thought of the Pacific Coast, expresses its warm admiration for the independence and courage which President Barrows has already manifested in dealing with matters of university and public concern. He is quoted as having declared in a public address that "Berkeley is honeycombed with Bolshevism." If that statement is based upon demonstrable facts, the work of President Barrows is clearly cut out for him, and he will have the strong support, not only of California but of the whole country, in setting his hand to the job.